



STIC Search Report

Biotech-Chem Library

STIC Database Tracking Number: 125357

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Tuesday, June 29, 2004
Art Unit: 1651
Phone: 272-0916
Serial Number: 10 / 041661

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Search Notes

SEARCH REQUEST FORM**Scientific and Technical Information Center**

Requester's Full Name: D Gitomen Examiner #: _____ Date: 6/22/04
Art Unit: 1651 Phone Number 30 _____ Serial Number: 10/041,661
Mail Box and Bldg/Room Location: _____ Results Format Preferred (circle): PAPER DISK E-MAIL
3671

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

JAN

1-11

STAFF USE ONLY**Type of Search****Vendors and cost where applicable**

Searcher: <u>Jan</u>	NA Sequence (#) _____	STN <u>✓</u>
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Date Searcher Picked Up: <u>6/29</u>	Bibliographic <u>✓</u>	Dr.Link _____
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Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
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L94 ANSWER 1 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:252741 HCAPLUS
DN 140:283896
ED Entered STN: 26 Mar 2004
TI Optical **biosensors** and methods of use thereof
IN Waggoner, Alan S.; Armitage, Bruce A.; Brown, William E.
PA Carnegie Mellon University, USA
SO PCT Int. Appl., 104 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N
CC 9-1 (Biochemical Methods)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004025268	A2	20040325	WO 2003-US29289	20030915
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRAI US 2002-410834P P 20020913

OS MARPAT 140:283896

AB A fundamental **biosensor** for detection of biol. or environmental analytes is provided. The **biosensor** comprises a selectivity component for recognition of a target mol. and a reporter mol. that is **sensitive** to changes in the microenvironment. Methods of using the **biosensor** are also provided, including in vivo and in vitro applications using **biosensor** mols. that optionally may be attached to a surface.

ST optical **biosensor** target recognition reporter microenvironment;
biol environmental analysis optical **biosensor**

IT Escherichia coli
(0157:H7, as biol. warfare agent, detection of; optical
biosensors having target recognition component and reporter
sensitive to changes in microenvironment)

IT Hemagglutinins
Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);
RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT
(Reactant or reagent); USES (Uses)
(A, as chemical handle on **biosensor** for use in isolating or
immobilizing **biosensor**; optical **biosensors** having
target recognition component and reporter **sensitive** to
changes in microenvironment)

IT Disease, animal
(Ciguatera, as contaminant, detection of; optical **biosensors**
having target recognition component and reporter **sensitive** to
changes in microenvironment)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(Coprius artemetaris as contaminant, detection of; optical
biosensors having target recognition component and reporter
sensitive to changes in microenvironment)

IT Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);
RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT
(Reactant or reagent); USES (Uses)
(G, as chemical handle on **biosensor** for use in isolating or
immobilizing **biosensor**; optical **biosensors** having
target recognition component and reporter **sensitive** to
changes in microenvironment)

IT Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);
RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT
(Reactant or reagent); USES (Uses)
(MBP (maltose-binding protein), as chemical handle on **biosensor**
for use in isolating or immobilizing **biosensor**; optical
biosensors having target recognition component and reporter
sensitive to changes in microenvironment)

IT Signal peptides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(NLS (nuclear localization signal), as chemical handle on
biosensor for use in isolating or immobilizing
biosensor; optical **biosensors** having target
recognition component and reporter **sensitive** to changes in
microenvironment)

IT Polysulfones, uses
RL: DEV (Device component use); TEM (Technical or engineered material
use); USES (Uses)
(alkylene derivs., as substrate; optical **biosensors** having
target recognition component and reporter **sensitive** to
changes in microenvironment)

IT Polycyclic compounds
RL: ANT (Analyte); ANST (Analytical study)
(aromatic hydrocarbons, as hazardous substance, detection of; optical
biosensors having target recognition component and reporter
sensitive to changes in microenvironment)

IT Cleaning solvents
Dermatophagoides
Mold (fungus)
Odor and Odorous substances
Pollen

Refrigerants

Solvents

(as air pollutant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Tobacco smoke

(as air pollutant; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Asbestos

Heavy metals

Volatile organic compounds

RL: ANT (Analyte); ANST (Analytical study)

(as air pollutant; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Alphavirus

Arenavirus

Brucella

Burkholderia mallei

Burkholderia pseudomallei

Chlamydia psittaci

Coxiella burnetii

Eastern equine encephalitis virus

Ebola virus

Filovirus

Francisella tularensis

Hantavirus

Lassa virus

Machupo virus

Marburg virus

Nipah virus

Rickettsia prowazeki

Variola major virus

Venezuelan equine encephalitis virus

Western equine encephalitis virus

Yersinia pestis

(as biol. warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Signal peptides

Thioredoxins

RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);

RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT

(Reactant or reagent); USES (Uses)

(as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Chemical warfare agents

(as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Cannabinoids

RL: ANT (Analyte); ANST (Analytical study)

(as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Adenoviridae

Amanita

Astrovirus

Bacillus anthracis

Bacillus cereus

Brucella melitensis
 Calicivirus
 Campylobacter jejuni
 Clostridium botulinum
 Clostridium perfringens
 Cryptosporidium parvum
 Cyclospora cayetanensis
 Entamoeba histolytica
 Giardia lamblia
 Hepatitis A virus
 Listeria monocytogenes
 Norwalk-like virus
 Parvovirus
 Rotavirus
 Salmonella
 Shigella
 Staphylococcus aureus
 Toxoplasma gondii
 Trichinella spiralis
 Vibrio cholerae
 Vibrio parahaemolyticus
 Vibrio vulnificus
 Yersinia enterocolitica
 Yersinia pseudotuberculosis

(as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Nitrites

RL: ANT (Analyte); ANST (Analytical study)

(as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Parasite

(as food contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Dyes

(as reporter mols.; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Chemiluminescent substances

Fluorescent substances

(as reporter; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Fluoropolymers, analysis

RL: ANT (Analyte); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)

(as substrate and as detectable chemical warfare agent; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Drug delivery systems

Films

Plates

(as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Alloys, uses

Fluoropolymers, uses

Polycarbonates, uses

Polyimides, uses

Zeolites (synthetic), uses

RL: DEV (Device component use); TEM (Technical or engineered material

- use); USES (Uses)
(as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Aptamers
(as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Aeromonas
Coliform bacteria
Coliphage
Cryptosporidium
Enterococcus
Escherichia coli
Giardia
Pathogen
(as water pollutant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Spheres
(beads, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Analysis
(biochem.; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT **Polymers**, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(block, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Disinfectants
(byproducts, as water pollutant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Peptides, biological studies
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(calmodulin-binding, as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(camelized, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Air pollution
(**carbon dioxide**, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Functional groups
(chemical handle, for use in isolating or immobilizing **biosensor**
; optical **biosensors** having target recognition component and
reporter **sensitive** to changes in microenvironment)

IT Biological materials
(contaminants, detection of; optical **biosensors** having target
recognition component and reporter **sensitive** to changes in
microenvironment)

IT Glass, uses
RL: DEV (Device component use); TEM (Technical or engineered material
use); USES (Uses)
(controlled pore, as substrate; optical **biosensors** having
target recognition component and reporter **sensitive** to
changes in microenvironment)

IT Skin
(dander, as air pollutant, detection of; optical **biosensors**
having target recognition component and reporter **sensitive** to
changes in microenvironment)

IT Air pollution
Biological warfare agents
Cell
Drugs
Environmental pollution
Eubacteria
Fungi
Health hazard
Microorganism
Pesticides
Soil pollution
Virus
Water pollution
(detection of; optical **biosensors** having target recognition
component and reporter **sensitive** to changes in
microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);
DEV (Device component use); TEM (Technical or engineered material use);
ANST (Analytical study); BIOL (Biological study); USES (Uses)
(diabodies, as target recognition component; optical **biosensors**
having target recognition component and reporter **sensitive** to
changes in microenvironment)

IT Apparatus
(diagnostic instruments, as substrate; optical **biosensors**
having target recognition component and reporter **sensitive** to
changes in microenvironment)

IT Solid wastes
(dredging, as water pollutant, detection of; optical **biosensors**
having target recognition component and reporter **sensitive** to
changes in microenvironment)

IT Escherichia coli
(enterohemorrhagic, as contaminant, detection of; optical
biosensors having target recognition component and reporter
sensitive to changes in microenvironment)

IT Escherichia coli
(enterotoxigenic, as contaminant, detection of; optical
biosensors having target recognition component and reporter
sensitive to changes in microenvironment)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(enterotoxin B, Staphylococcal, as biol. warfare agent, detection of;
optical **biosensors** having target recognition component and
reporter **sensitive** to changes in microenvironment)

IT Toxins

- RL: ANT (Analyte); ANST (Analytical study)
(epsilon, from Clostridium perfringens, as biol. warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Air pollution
(exhaust, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT **Biosensors**
(fiber-optic, reporter detectable by; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Cytometry
(flow, reporter detectable by; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Microscopes
(**fluorescence, epifluorescence**, reporter detectable by; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(fragments, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Virus
(hemorrhagic fever virus, as biol. warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(humanized, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Prosthetic materials and Prosthetics
(implants, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Medical goods
(instruments, surgical, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Polyesters, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(lactide, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Medical goods
(medical devices, as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT **Sensors**
(microarray readers, reporter detectable by; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Disease, plant
(mildew, as air pollutant, detection of; optical **biosensors**

- having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Antibodies and Immunoglobulins
 RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 (monoclonal, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT **Cyanine dyes**
 (monomethine or trimethine, as restriction **sensor dye** reporter mol.; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Transcription factors
 RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
 (myc, as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Ricins
 RL: ANT (Analyte); ANST (Analytical study)
 (of Ricinus communis, as biol. warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Environmental analysis
 Glass substrates
 Immobilization, molecular or cellular
 (optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Amino acids, analysis
 Carbohydrates, analysis
 Cytokines
 Hormones, animal, analysis
 Nucleic acids
 Peptides, analysis
 Proteins
 RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
 (optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT **Biosensors**
 (optical; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Phosphates, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (organophosphates, as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Air pollution
 (particulate, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Azines
 RL: ANT (Analyte); ANST (Analytical study)
 (phenothiazines, as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Aromatic hydrocarbons, analysis
 RL: ANT (Analyte); ANST (Analytical study)

- (polycyclic, as hazardous substance, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Transcytosis
 - (protein containing domain for, as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Confocal laser scanning microscopy
 - Fluorometers
 - (reporter detectable by; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Molecular dynamics
 - Polarity
 - pH
 - (reporter **dye sensitive** to; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Scomberoides
 - (scombroid fish poisoning; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Environmental pollution
 - (sediment, as water pollutant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Toxins
 - RL: ANT (Analyte); ANST (Analytical study)
 - (shellfish, as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Antibodies and Immunoglobulins
 - RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 - (single chain, Fv, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Inorganic compounds
 - Organic compounds, analysis
 - RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
 - (small; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Materials
 - (template imprinted, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Antibodies and Immunoglobulins
 - RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 - (tetrabodies, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Shellfish
 - (toxins, as contaminant, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)
- IT Antibodies and Immunoglobulins
 - RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);

DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses) (tribodies, as target recognition component; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Microscopes
(two photon excitation, reporter detectable by; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT Peptides, biological studies
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(type III secretion system-targeting, as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 6581-06-2, BZ
RL: ANT (Analyte); ANST (Analytical study)
(Agent BZ, as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 532-27-4, Chloroacetophenone
RL: ANT (Analyte); ANST (Analytical study)
(Agent CNC, Agent CNB, as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 675600-78-9, Chloropicrin-phenacyl chloride mixture
RL: ANT (Analyte); ANST (Analytical study)
(CNS, as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 50-00-0, Formaldehyde, analysis 124-38-9, Carbon dioxide, analysis 630-08-0, Carbon monoxide, analysis 7446-09-5, Sulfur dioxide, analysis 10028-15-6, Ozone, analysis 10043-92-2, Radon, analysis 10102-44-0, Nitrogen dioxide, analysis 11104-93-1, Nitrogen oxide, analysis 12624-32-7, Sulfur oxide
RL: ANT (Analyte); ANST (Analytical study)
(as air pollutant; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 505-60-2, Mustard 107231-12-9, Botulin
RL: ANT (Analyte); ANST (Analytical study)
(as biol. warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 24937-47-1, Poly arginine 25212-18-4, Poly arginine 26062-48-6, Poly L-Histidine 26854-81-9 28378-18-9 50812-37-8, Glutathione-S-transferase 98849-88-8, FLAG peptide
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(as chemical handle on **biosensor** for use in isolating or immobilizing **biosensor**; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 50-37-3, LSD 55-86-7, Nitrogen mustard 74-90-8, Hydrogen cyanide, analysis 75-44-5, Phosgene 76-06-2, Chloropicrin 77-81-6, Tabun 96-64-0, Soman 107-44-8, Sarin 257-07-8, CR 329-99-7 382-21-8, Perfluoroisobutylene 437-38-7D, Fentanyl, compds. 503-38-8, Diphosgene 506-77-4, Cyanogen chloride 541-25-3, Lewisite 578-94-9, Adamsite 593-89-5, Methylchloroarsine 598-14-1, Ethyldichloroarsine 696-28-6

712-48-1, Diphenylchloroarsine 1314-13-2, Zinc oxide, analysis
 1341-24-8, Chloroacetophenone 1794-86-1, Phosgene oxime 2698-41-1, CS
 3563-36-8, Sesqui mustard 7550-45-0, Titanium tetrachloride, analysis
 7647-01-0, Hydrogen chloride, analysis 7782-50-5, Chlorine, analysis
 7784-42-1, Arsine 10102-43-9, Nitrogen oxide (NO), analysis
 23525-22-6, Diphenylcyanoarsine 25037-78-9, VE 35513-90-7, VM
 50782-69-9, VX 70268-40-5 70288-88-9

RL: ANT (Analyte); ANST (Analytical study)

(as chemical warfare agent, detection of; optical **biosensors**
 having target recognition component and reporter **sensitive** to
 changes in microenvironment)

IT 300-54-9, Muscarine 463-77-4D, Carbamic acid, compds. 520-52-5,
 Psilocybin 2552-55-8, Ibotenic acid 2763-96-4, Muscimol 4368-28-9,
 Tetradotoxin 7440-28-0, Thallium, analysis 7440-31-5, Tin, analysis
 7440-36-0, Antimony, analysis 7440-66-6, Zinc, analysis 7681-49-4,
 Sodium fluoride, analysis 51481-10-8, Vomitoxin

RL: ANT (Analyte); ANST (Analytical study)

(as contaminant, detection of; optical **biosensors** having
 target recognition component and reporter **sensitive** to
 changes in microenvironment)

IT 50-29-3, DDT, analysis 50-32-8, Benzopyrene, analysis 53-70-3,
 Dibenz[a,h]anthracene 60-57-1, Dieldrin 75-01-4, Vinyl chloride,
 analysis 87-68-3, Hexachlorobutadiene 12789-03-6, Chlordane
 18540-29-9, Chromium6+, analysis 56832-73-6, Benzofluoranthene

RL: ANT (Analyte); ANST (Analytical study)

(as hazardous substance, detection of; optical **biosensors**
 having target recognition component and reporter **sensitive** to
 changes in microenvironment)

IT 7440-38-2, Arsenic, analysis
 RL: ANT (Analyte); ANST (Analytical study)

(as pollutant, detection of; optical **biosensors** having target
 recognition component and reporter **sensitive** to changes in
 microenvironment)

IT 7439-92-1, Lead, analysis 7439-97-6, Mercury, analysis

RL: ANT (Analyte); ANST (Analytical study)

(as pollutant; optical **biosensors** having target recognition
 component and reporter **sensitive** to changes in
 microenvironment)

IT 57-12-5, Cyanide, analysis

RL: ANT (Analyte); ANST (Analytical study)

(as soil pollutant or chemical warfare agent, detection of; optical
biosensors having target recognition component and reporter
sensitive to changes in microenvironment)

IT 67-64-1, Acetone, analysis 67-66-3, Chloroform, analysis 71-43-2,
 Benzene, analysis 79-01-6, Trichloroethylene, analysis 92-52-4D,
 1,1'-Biphenyl, chloro derivs. 108-88-3, Toluene, analysis 127-18-4,
 Tetrachloroethylene, analysis 7440-39-3, Barium, analysis 7440-43-9,
 Cadmium, analysis

RL: ANT (Analyte); ANST (Analytical study)

(as soil pollutant, detection of; optical **biosensors** having
 target recognition component and reporter **sensitive** to
 changes in microenvironment)

IT 9002-84-0, Poly(tetra)fluoroethylene

RL: ANT (Analyte); DEV (Device component use); TEM (Technical or
 engineered material use); ANST (Analytical study); USES (Uses)

(as substrate and as detectable chemical warfare agent; optical
biosensors having target recognition component and reporter
sensitive to changes in microenvironment)

IT 7440-50-8, Copper, analysis

RL: ANT (Analyte); DEV (Device component use); TEM (Technical or
 engineered material use); ANST (Analytical study); USES (Uses)

(as substrate or as contaminant to be detected; optical
biosensors having target recognition component and reporter

sensitive to changes in microenvironment)

IT 1303-00-0, Gallium arsenide, uses 1314-61-0, Tantalum oxide 1344-28-1, Alumina, uses 7429-90-5, Aluminum, uses **7440-06-4**, **Platinum**, uses 7440-21-3, Silicon, uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses 7440-56-4, Germanium, uses 7440-57-5, Gold, uses **7631-86-9**, **Silica**, uses 9002-81-7, Polyoxymethylene 9002-88-4, Polyethylene 9002-98-6 9003-05-8, Polyacrylamide 9003-17-2, Polyvinylethylene 9003-53-6, Polystyrene 9011-14-7, Polymethyl methacrylate **9016-00-6**, **Polydimethylsiloxane** 12033-89-5, Silicon nitride, uses 13463-67-7, Titania, uses 14808-60-7, Quartz, uses 24937-79-9, Polyvinylidenedifluoride 25249-16-5 25585-20-0, Polymethacrylimide 25587-79-5, Polypropylene 31694-16-3 **31900-57-9**, **Polydimethylsiloxane** 59269-51-1, Polyvinylphenol

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT 7723-14-0, Phosphorus, analysis

RL: ANT (Analyte); ANST (Analytical study)

(red, as chemical warfare agent, detection of; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

IT **124-38-9**, **Carbon dioxide**, analysis

10043-92-2, Radon, analysis

RL: **ANT (Analyte); ANST (Analytical study)**

(as air pollutant; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

RN 124-38-9 HCAPLUS

CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)

O=C=O

RN 10043-92-2 HCAPLUS

CN Radon (8CI, 9CI) (CA INDEX NAME)

Rn

IT **7440-06-4**, **Platinum**, uses **7631-86-9**, **Silica**, uses **9016-00-6**, **Polydimethylsiloxane** **31900-57-9**, **Polydimethylsiloxane**

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(as substrate; optical **biosensors** having target recognition component and reporter **sensitive** to changes in microenvironment)

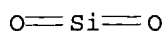
RN 7440-06-4 HCAPLUS

CN Platinum (8CI, 9CI) (CA INDEX NAME)

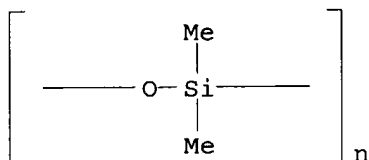
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RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



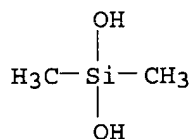
RN 9016-00-6 HCAPLUS
 CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



RN 31900-57-9 HCAPLUS
 CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8
 CMF C2 H8 O2 Si



L94 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2003:696473 HCAPLUS
 DN 139:223324
 ED Entered STN: 05 Sep 2003
 TI **Colorimetric** artificial nose having an array of **dyes**
 and method for artificial olfaction
 IN Suslick, Kenneth S.
 PA Board of Trustees of the University of Illinois, USA
 SO U.S. Pat. Appl. Publ., 51 pp., Cont.-in-part of U.S. Ser. No. 705,329.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM G01N031-22
 NCL 436169000; 422090000; 422058000
 CC 80-2 (Organic Analytical Chemistry)
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003166298	A1	20030904	US 2002-279701	20021024
	US 6368558	B1	20020409	US 2000-532125	20000321
	US 6495102	B1	20021217	US 2000-705329	20001103
	WO 2001071318	A1	20010927	WO 2001-US9092	20010321
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

PRAI US 2000-532125 A2 20000321
 US 2000-705329 A2 20001103
 WO 2001-US9092 A 20010321

AB The present invention involves an artificial nose comprising an array, the array comprising at least a **1st dye** and a **2nd dye** deposited directly onto a single support in a predetd. pattern combination, the combination of **dyes** in the array having a distinct and direct spectral absorbance or reflectance response to distinct analytes comprising one or more parent analytes or their derivs. In one embodiment, the invention further comprises an oxidizing source to partially oxidize at least one distinct parent analyte to at least one corresponding derivative analyte of said parent analyte, the array at least in part having a stronger distinct and direct absorbance or reflectance response to the derivative analyte than to the corresponding parent analyte.

ST colorimetric artificial nose array **dye** olfaction

IT **Colorimetric indicators**

Colorimetry

Dyes

Gas analysis

Gas sensors

Olfaction

Optical sensors

(colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

IT Metalloporphyrins

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

IT **Fluoropolymers, analysis**

Polysiloxanes, analysis

RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
 (colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

IT 1936-15-8

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Orange G; colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

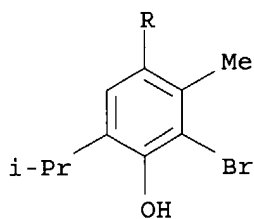
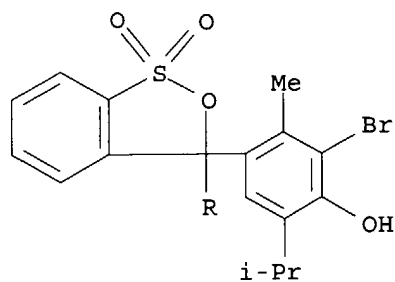
IT 64-17-5, Ethanol, analysis 67-64-1, Acetone, analysis 67-66-3, Chloroform, analysis 68-12-2, Dimethylformamide, analysis 71-43-2, Benzene, analysis 75-05-8, Acetonitrile, analysis 75-09-2, Methylene chloride, analysis 108-91-8, Cyclohexylamine, analysis 109-06-8, 2-Methylpyridine 109-73-9, n-Butylamine, analysis 109-99-9, Tetrahydrofuran, analysis 110-86-1, Pyridine, analysis 111-26-2, Hexylamine 111-31-9, 1-Hexanethiol 111-47-7, Dipropyl sulfide 111-86-4, n-Octylamine 121-45-9, Trimethyl phosphite 122-52-1, Triethyl phosphite 998-40-3, Tri-n-butylphosphine 1322-36-7, Dodecanethiol

RL: ANT (Analyte); ANST (Analytical study)

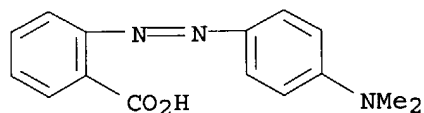
(colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)

IT 61-73-4, Methylene blue 72-48-0, Alizarin **76-59-5**, Bromothymol Blue 76-60-8, Bromocresol Green 76-61-9, Thymol Blue 92-62-6, 3,6-Acridineamine 115-40-2, Bromocresol Purple 143-74-8, Phenol Red 477-73-6, Safranin O 480-16-0, Morin **493-52-7**, Methyl Red 494-38-2, Acridine Orange Base 510-13-4 528-58-5, Cyanidin Chloride **547-58-0**, Methyl Orange 548-61-8, Para-Rosaniline Base 548-62-9, Crystal Violet 553-24-2, Neutral Red **573-58-0**, Congo Red 587-98-4, Metanil Yellow 617-19-6 633-00-1, Rosolic Acid 992-59-6, Benzopurpurin 4B **1733-12-6**, Cresol Red 2051-85-6, Sudan Orange G 2243-76-7, Mordant Orange 1 2580-56-5, Victoria Blue B 4430-20-0, Chlorophenol red 4569-86-2,

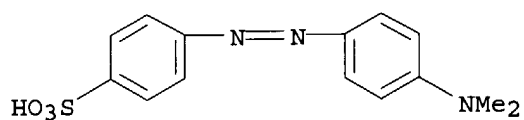
Methylene Violet 3RAX 6416-57-5, Fat Brown RR 6535-42-8, Fat Brown B 7385-67-3, Nile Red 10081-39-7, Reichardt's **Dye** 14074-80-7, 5,10,15,20-Tetraphenylporphyrinato zinc(II) 14172-90-8, 5,10,15,20-Tetraphenylporphyrinato cobalt(II) 14172-91-9, 5,10,15,20-Tetraphenylporphyrinato copper(II) 14641-64-6 19381-50-1, Naphthol Green B 29484-63-7, 5,10,15,20-Tetraphenylporphyrinato iron(III) 31482-56-1, Disperse Orange 25 36965-71-6, 5,10,15,20-Tetrakis(pentafluorophenyl)porphyrinato iron (III) chloride 38414-01-6, 5,10,15,20-Tetraphenylporphyrinato cobalt(III) 59388-92-0, 5,10,15,20-Tetraphenylporphyrinato manganese(III) 63692-18-2, 5,10,15,20-Tetraphenylporphyrinato chromium(III) 67574-57-6, 5,10,15,20-Tetraphenylporphyrinato tin (IV) 79231-60-0, 5,10,15,20-Tetraphenylporphyrinato ruthenium(II) 185460-51-9, 5,10,15,20-Tetrakis(2',6'-dihydroxyphenyl)porphyrinatozinc(II) 316803-86-8, 5-Phenyl-10,15,20-tris(2',6'-dihydroxyphenyl)porphyrinatozinc(II) 316803-89-1, 5-(Phenyl)-10,15,20-trikis(2',6'-**disilanyloxyphenyl**)porphyrinatozinc(II) 316803-93-7, 5,10,15-Trikis(2,6-**disilanyloxyphenyl**)-20-(2-hydroxy-6-silyloxyphenyl)porphyrinatozinc(II) 316803-95-9, 5,10,15,20-Tetrakis(2',6'-**disilanyloxyphenyl**)porphyrinatozinc(II)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)
 IT 146997-20-8 361191-65-3
 RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
 (colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)
 IT 84-69-5, Di-iso-butylphthalate 9002-84-0, Teflon 9003-53-6, Polystyrene 9016-00-6, Di-Me **siloxane**, SRU 31900-57-9, **Dimethylsilanediol homopolymer**
 RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
 (colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)
 IT 100-52-7, Benzaldehyde, reactions 109-97-7, Pyrrole 3392-97-0, 2,6-Dimethoxybenzaldehyde 18162-48-6, Chloro-tert-**butyldimethylsilane**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)
 IT 145363-07-1P, 5,10,15-Tris(2,6-dimethoxyphenyl)-20-phenyl-21H,23H-porphine
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)
 IT 18472-87-2, Eosin Blue
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (phloxine B; colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)
 IT 76-59-5, Bromothymol Blue 493-52-7, Methyl Red 547-58-0, Methyl Orange 573-58-0, Congo Red 1733-12-6, Cresol Red
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (colorimetric artificial nose with array of metalloporphyrin and **dye indicators** and method for artificial olfaction)
 RN 76-59-5 HCAPLUS
 CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis[2-bromo-3-methyl-6-(1-methylethyl)-(9CI) (CA INDEX NAME)



RN 493-52-7 HCAPLUS
 CN Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo] - (9CI) (CA INDEX NAME)

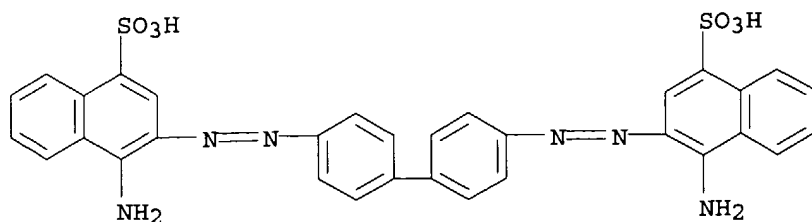


RN 547-58-0 HCAPLUS
 CN Benzenesulfonic acid, 4-[[4-(dimethylamino)phenyl]azo] -, sodium salt (9CI)
 (CA INDEX NAME)



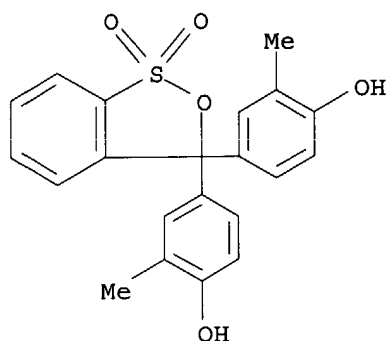
● Na

RN 573-58-0 HCAPLUS
 CN 1-Naphthalenesulfonic acid, 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis[4-amino-, disodium salt (9CI) (CA INDEX NAME)

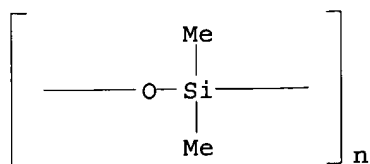


● 2 Na

RN 1733-12-6 HCAPLUS
 CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis[2-methyl-(9CI) (CA INDEX NAME)



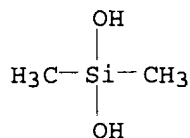
IT 9016-00-6, Di-Me siloxane, SRU 31900-57-9,
Dimethylsilanediol homopolymer
 RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST
 (Analytical study); USES (Uses)
 (colorimetric artificial nose with array of metalloporphyrin and
dye indicators and method for artificial olfaction)
 RN 9016-00-6 HCAPLUS
 CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



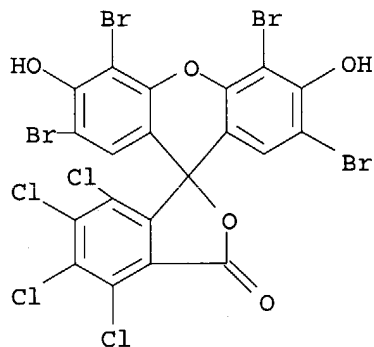
RN 31900-57-9 HCAPLUS
 CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8
 CMF C2 H8 O2 Si



IT 18472-87-2, Eosin Blue
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (phloxine B; colorimetric artificial nose with array of
 metalloporphyrin and **dye indicators** and method for
 artificial olfaction)
 RN 18472-87-2 HCAPLUS
 CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2',4',5',7'-tetrabromo-
 4,5,6,7-tetrachloro-3',6'-dihydroxy-, disodium salt (9CI) (CA INDEX NAME)



● 2 Na

L94 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2003:590557 HCAPLUS
 DN 139:127083
 ED Entered STN: 01 Aug 2003
 TI **Colorimetric** artificial nose having an array of **dyes**
 and method for artificial olfaction
 IN Suslick, Kenneth S.; Rakow, Neal A.; Sen, Avijit; McNamara, William B.;
 Kosal, Margaret E.
 PA Board of Trustees of the University of Illinois, USA
 SO U.S. Pat. Appl. Publ., 47 pp., Cont.-in-part of U. S. Ser. No. 705,329.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM G01N021-00
 ICS G01N021-75
 NCL 422055000; 436164000; 623010000
 CC 80-2 (Organic Analytical Chemistry)
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003143112	A1	20030731	US 2002-279788	20021024
	US 6368558	B1	20020409	US 2000-532125	20000321
	US 6495102	B1	20021217	US 2000-705329	20001103
PRAI	US 2000-532125	A2	20000321		
	US 2000-705329	A2	20001103		

- AB The present invention involves an artificial nose having an array comprising at least a **1st dye** and a **2nd dye** in combination and having a distinct spectral response to an analyte. In one embodiment, the **1st** and **2nd dyes** are from the group comprising chemoresponsive **dyes**, and the **2nd dye** is distinct from the **1st dye**. In one embodiment, the **1st dye** is selected from the group consisting of porphyrin, chlorin, chlorophyll, phthalocyanine, and salen, or their metal complexes. In another embodiment, the **2nd dye** is selected from the group of **dyes** consisting of **acid-base indicator dyes** and solvatochromic **dyes**. The present invention is particularly useful in detecting metal ligating vapors. Further, the array of the present invention can be connected to a visual display device.
- ST colorimetric artificial nose array **dye** olfaction
- IT **Colorimetric indicators**
Colorimetry
Gas analysis
Gas sensors
Olfaction
Optical sensors
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)
- IT Metalloporphyrins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)
- IT **Fluoropolymers, analysis**
Polysiloxanes, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)
- IT 64-17-5, Ethanol, analysis 67-64-1, Acetone, analysis 67-66-3, Chloroform, analysis 68-12-2, Dimethylformamide, analysis 71-43-2, Benzene, analysis 75-05-8, Acetonitrile, analysis 75-09-2, Methylene chloride, analysis 108-91-8, Cyclohexylamine, analysis 109-06-8, 2-Methylpyridine 109-73-9, n-Butylamine, analysis 109-99-9, Tetrahydrofuran, analysis 110-86-1, Pyridine, analysis 111-26-2, Hexylamine 111-31-9, 1-Hexanethiol 111-47-7, Dipropyl sulfide 111-86-4, n-Octylamine 121-45-9, Trimethyl phosphite 122-52-1, Triethyl phosphite 998-40-3, Tri-n-butylphosphine 1322-36-7, Dodecanethiol
RL: ANT (Analyte); ANST (Analytical study)
(colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)
- IT 14074-80-7, 5,10,15,20-Tetraphenylporphyrinato zinc(II) 14172-90-8, 5,10,15,20-Tetraphenylporphyrinato cobalt(II) 14172-91-9, 5,10,15,20-Tetraphenylporphyrinato copper(II) 14641-64-6 29484-63-7, 5,10,15,20-Tetraphenylporphyrinato iron(III) 36965-71-6, 5,10,15,20-Tetrakis(pentafluorophenyl)porphyrinato iron(III) chloride 38414-01-6, 5,10,15,20-Tetraphenylporphyrinato cobalt(III) 59388-92-0, 5,10,15,20-Tetraphenylporphyrinato manganese(III) 63692-18-2, 5,10,15,20-Tetraphenylporphyrinato chromium(III) 67574-57-6, 5,10,15,20-Tetraphenylporphyrinato tin(IV) 79231-60-0, 5,10,15,20-Tetraphenylporphyrinato ruthenium(II) 185460-51-9, 5,10,15,20-Tetrakis(2',6'-dihydroxyphenyl)porphyrinatozinc(II) 316803-86-8, 5-Phenyl-10,15,20-tris(2',6'-dihydroxyphenyl)porphyrinatozinc(II) 316803-89-1, 5-(Phenyl)-10,15,20-trikis(2',6'-disilanyloxyphenyl)porphyrinatozinc(II) 316803-93-7, 5,10,15-Trikis(2,6-disilanyloxyphenyl)-20-(2-hydroxy-6-silyloxyphenyl)porphyrinatozinc(II) 316803-95-9, 5,10,15,20-

Tetrakis(2',6'-**disilanyloxyphenyl**)porphyrinatozinc(II)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)

IT 146997-20-8 361191-65-3
 RL: ARG (Analytical reagent use); DEV (Device component use); ANST
 (Analytical study); USES (Uses)
 (colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)

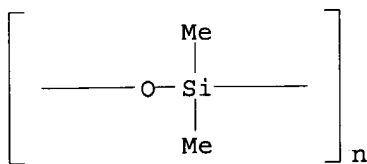
IT 84-69-5, Di-iso-butylphthalate 9002-84-0, Teflon 9003-53-6,
 Polystyrene 9016-00-6, Di-Me **siloxane**, SRU
31900-57-9, Dimethylsilanediol homopolymer
 RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST
 (Analytical study); USES (Uses)
 (colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)

IT 100-52-7, Benzaldehyde, reactions 109-97-7, Pyrrole 3392-97-0,
 2,6-Dimethoxybenzaldehyde 18162-48-6, Chloro-tert-
butyldimethylsilane
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)

IT 145363-07-1P, 5,10,15-Tris(2,6-dimethoxyphenyl)-20-phenyl-21H,23H-porphine
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)

IT 9016-00-6, Di-Me **siloxane**, SRU 31900-57-9,
Dimethylsilanediol homopolymer
 RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST
 (Analytical study); USES (Uses)
 (colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)

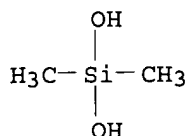
RN 9016-00-6 HCAPLUS
 CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



RN 31900-57-9 HCAPLUS
 CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8
 CMF C2 H8 O2 Si



AN 2003:550133 HCAPLUS
 DN 139:97604
 ED Entered STN: 18 Jul 2003
 TI **Sensor** for monitoring metabolic activity of an anaerobic or
 aerobic microorganism.
 IN **Yeh, Ming-Hsuing**
 PA **Becton, Dickinson and Company, USA**
 SO Eur. Pat. Appl., 10 pp.
 CODEN: EPXXDW

DT Patent
 LA English
 IC ICM G01N021-64
 ICS G01N021-77
 CC 9-1 (Biochemical Methods)
 Section cross-reference(s): 10

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1327874	A2	20030716	EP 2003-370	20030110 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	US 2003133123	A1	20030717	US 2002-41661	20020110 <--
	JP 2003262628	A2	20030919	JP 2003-5019	20030110 <--
PRAI	US 2002-41661	A	20020110	<--	

AB The present invention is directed to a **sensor** system for
 monitoring metabolic activity of an anaerobic or aerobic microorganism.
 The present invention further relates to a **sensor** system that
 can individually and simultaneously monitor **oxygen** and
carbon dioxide levels of a **gas** composition Also
 provided is a **sensor** formulation for use with the **sensor**
 system of the present invention and a method of making the same.

ST **sensor** formulation detection **gas** compn

IT Microorganism

(aerobic; **sensor** for monitoring metabolic activity of an
 anaerobic or aerobic microorganism)

IT Microorganism

(anaerobic; **sensor** for monitoring metabolic activity of an
 anaerobic or aerobic microorganism)

IT **Acid-base indicators**

Catalysts

Chromophores

Coating process

Composition

Crosslinking agents

Density

Dyes

Fluorescent substances

Gas analysis

Metabolism, microbial

Mixing

Polymerization

Powders

Respiration, microbial

Sensors

Wavelength

(**sensor** for monitoring metabolic activity of an anaerobic or
 aerobic microorganism)

IT **Polymers, uses**

RL: DEV (Device component use); USES (Uses)

(**sensor** for monitoring metabolic activity of an anaerobic or
 aerobic microorganism)

IT **124-38-9, Carbon dioxide, analysis**

7782-44-7, Oxygen, analysis

RL: ANT (Analyte); ANST (Analytical study)
 (sensor for monitoring metabolic activity of an anaerobic or aerobic microorganism)

IT 76-59-5, Bromthymol Blue 1733-12-6, Cresol Red
 21329-70-4 36536-22-8, 1,1',3,3,3',3'-
 Hexamethylindodicarbocyanine iodide

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (sensor for monitoring metabolic activity of an anaerobic or aerobic microorganism)

IT 7631-86-9, Silica, analysis

RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (sensor for monitoring metabolic activity of an anaerobic or aerobic microorganism)

IT 7440-06-4, Platinum, uses

RL: CAT (Catalyst use); USES (Uses)
 (sensor for monitoring metabolic activity of an anaerobic or aerobic microorganism)

IT 124-38-9, Carbon dioxide, analysis
 7782-44-7, Oxygen, analysis

RL: ANT (Analyte); ANST (Analytical study)
 (sensor for monitoring metabolic activity of an anaerobic or aerobic microorganism)

RN 124-38-9 HCAPLUS

CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)

O=C=O

RN 7782-44-7 HCAPLUS

CN Oxygen (8CI, 9CI) (CA INDEX NAME)

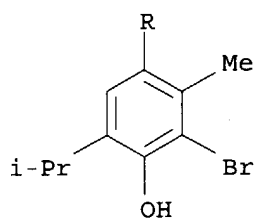
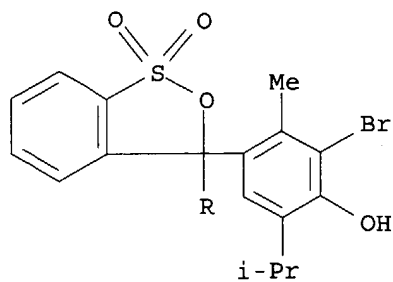
O=O

IT 76-59-5, Bromthymol Blue 1733-12-6, Cresol Red
 21329-70-4 36536-22-8, 1,1',3,3,3',3'-
 Hexamethylindodicarbocyanine iodide

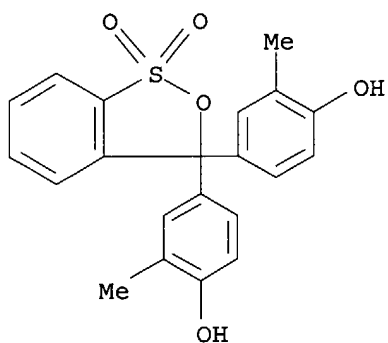
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (sensor for monitoring metabolic activity of an anaerobic or aerobic microorganism)

RN 76-59-5 HCAPLUS

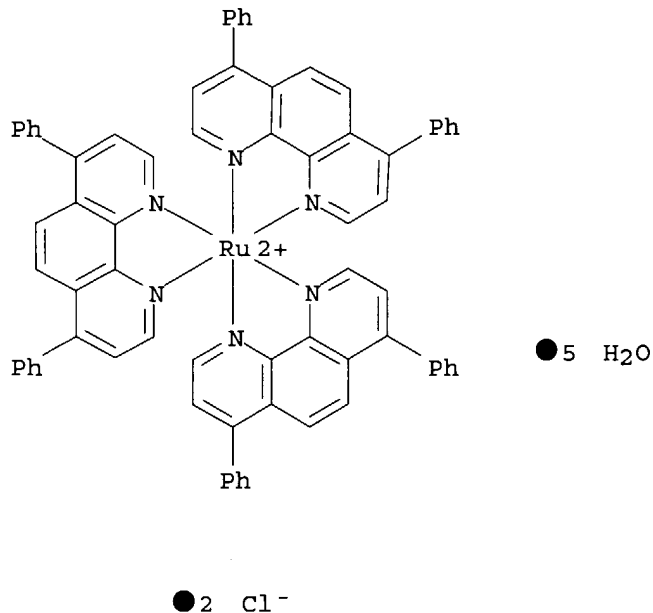
CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis[2-bromo-3-methyl-6-(1-methylethyl)- (9CI) (CA INDEX NAME)



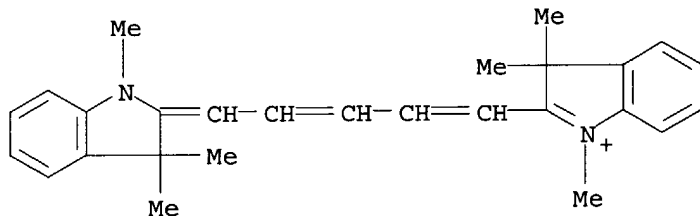
RN 1733-12-6 HCAPLUS
 CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis[2-methyl-(9CI) (CA INDEX NAME)



RN 21329-70-4 HCAPLUS
 CN Ruthenium(2+), tris(4,7-diphenyl-1,10-phenanthroline-κN1,κN10)-, dichloride, pentahydrate, (OC-6-11)- (9CI) (CA INDEX NAME)

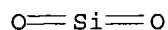


RN 36536-22-8 HCAPLUS
 CN 3H-Indolium, 2-[5-(1,3-dihydro-1,3,3-trimethyl-2H-indol-2-ylidene)-1,3-pentadienyl]-1,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)



● I⁻

IT 7631-86-9, **Silica**, analysis
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (sensor for monitoring metabolic activity of an anaerobic or aerobic microorganism)
 RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 7440-06-4, **Platinum**, uses
 RL: CAT (Catalyst use); USES (Uses)
 (sensor for monitoring metabolic activity of an anaerobic or aerobic microorganism)
 RN 7440-06-4 HCAPLUS
 CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

L94 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:960580 HCAPLUS
DN 138:18935
ED Entered STN: 19 Dec 2002
TI **Colorimetric** artificial nose having an array of **dyes**
and method of artificial olfaction
IN Suslick, Kenneth S.; Rakow, Neal A.; Sen, Avijit
PA Board of Trustees of the University of Illinois, USA
SO U.S., 32 pp., Cont.-in-part of U.S. 6,368,558.
CODEN: USXXAM
DT Patent
LA English
IC ICM G01N021-00
NCL 422055000; 422068100; 422082050; 422083000; 422085000; 436164000;
436172000
CC 80-2 (Organic Analytical Chemistry)
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6495102	B1	20021217	US 2000-705329	20001103
	US 6368558	B1	20020409	US 2000-532125	20000321
	WO 2001071318	A1	20010927	WO 2001-US9092	20010321
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP	1274983	A1	20030115	EP 2001-920627	20010321
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	US 2003129085	A1	20030710	US 2002-278421	20021023
	US 2003143112	A1	20030731	US 2002-279788	20021024
	US 2003166298	A1	20030904	US 2002-279701	20021024
PRAI	US 2000-532125	A2	20000321		
	US 2000-705329	A	20001103		
	WO 2001-US9092	W	20010321		
AB	The present invention involves an artificial nose having an array comprising at least a 1st dye and a 2nd dye in combination and having a distinct spectral response to an analyte. In one embodiment, the 1st and 2nd dyes are from the group comprising porphyrin, chlorin, chlorophyll, phthalocyanine, or salen. In a further embodiment, the 1st and 2nd dyes are metalloporphyrins. The present invention is particularly useful in detecting metal ligating vapors. Further, the array of the present invention can be connected to a wavelength sensitive light detecting device.				
ST	colorimetric artificial nose array dye olfaction				
IT	Colorimetric indicators Colorimetry Gas analysis Gas sensors Olfaction Optical sensors (colorimetric artificial nose with array of metalloporphyrin indicators and method for artificial olfaction)				

- IT Metalloporphyrins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)
- IT **Fluoropolymers, analysis**
Polysiloxanes, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST
(Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)
- IT 64-17-5, Ethanol, analysis 67-64-1, Acetone, analysis 67-66-3,
Chloroform, analysis 68-12-2, Dimethylformamide, analysis 71-43-2,
Benzene, analysis 75-05-8, Acetonitrile, analysis 75-09-2, Methylene
chloride, analysis 108-91-8, Cyclohexylamine, analysis 109-06-8,
2-Methylpyridine 109-73-9, n-Butylamine, analysis 109-99-9,
Tetrahydrofuran, analysis 110-86-1, Pyridine, analysis 111-26-2,
Hexylamine 111-31-9, 1-Hexanethiol 111-47-7, Dipropyl sulfide
111-86-4, n-Octylamine 121-45-9, Trimethyl phosphite 122-52-1,
Triethyl phosphite 998-40-3, Tri-n-butylphosphine 1322-36-7,
Dodecanethiol
RL: ANT (Analyte); ANST (Analytical study)
(colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)
- IT 14074-80-7, 5,10,15,20-Tetraphenylporphyrinato zinc(II) 14172-90-8,
5,10,15,20-Tetraphenylporphyrinato cobalt(II) 14172-91-9,
5,10,15,20-Tetraphenylporphyrinato copper(II) 14641-64-6 29484-63-7,
5,10,15,20-Tetraphenylporphyrinato iron(III) 36965-71-6,
5,10,15,20-Tetrakis(pentafluorophenyl)porphyrinato iron (III) chloride
38414-01-6, 5,10,15,20-Tetraphenylporphyrinato cobalt(III) 59388-92-0,
5,10,15,20-Tetraphenylporphyrinato manganese(III) 63692-18-2,
5,10,15,20-Tetraphenylporphyrinato chromium(III) 67574-57-6,
5,10,15,20-Tetraphenylporphyrinato tin (IV) 79231-60-0,
5,10,15,20-Tetraphenylporphyrinato ruthenium(II) 185460-51-9,
5,10,15,20-Tetrakis(2',6'-dihydroxyphenyl)porphyrinatozinc(II)
316803-86-8, 5-Phenyl-10,15,20-tris(2',6'-dihydroxyphenyl)porphyrinatozinc
(II) 316803-89-1, 5-(Phenyl)-10,15,20-trikis(2',6'-
disilanyloxyphenyl)porphyrinatozinc(II) 316803-93-7,
5,10,15-Trikis(2,6-**disilanyloxyphenyl**)-20-(2-hydroxy-6-
silyloxyphenyl)porphyrinatozinc(II) 316803-95-9, 5,10,15,20-
Tetrakis(2',6'-**disilanyloxyphenyl**)porphyrinatozinc(II)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)
- IT 146997-20-8 361191-65-3
RL: ARG (Analytical reagent use); DEV (Device component use); ANST
(Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)
- IT 84-69-5, Di-iso-butylphthalate 9002-84-0, Teflon 9003-53-6,
Polystyrene 9016-00-6, Di-Me **siloxane**, SRU
31900-57-9, Dimethylsilanediol homopolymer
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST
(Analytical study); USES (Uses)
(colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)
- IT 100-52-7, Benzaldehyde, reactions 109-97-7, Pyrrole 3392-97-0,
2,6-Dimethoxybenzaldehyde 18162-48-6, Chloro-tert-
butyldimethylsilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)
- IT 145363-07-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

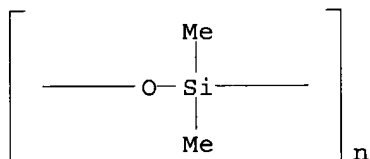
(Reactant or reagent)

(colorimetric artificial nose with array of metalloporphyrin
indicators and method for artificial olfaction)

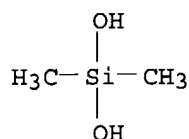
RE.CNT 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD
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 IT 9016-00-6, Di-Me siloxane, SRU 31900-57-9,
Dimethylsilanediol homopolymer
 RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
 (colorimetric artificial nose with array of metalloporphyrin **indicators** and method for artificial olfaction)
 RN 9016-00-6 HCAPLUS
 CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



RN 31900-57-9 HCAPLUS
 CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 1066-42-8
 CMF C2 H8 O2 Si



L94 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2002:539937 HCAPLUS
 DN 137:75520
 ED Entered STN: 19 Jul 2002
 TI Optical **sensors** and **sensor** arrays comprising **indicators** and reference substances
 IN Klimant, Ingo; Leiner, Marco Jean Pierre
 PA Presens Precision Sensing GmbH, Germany
 SO PCT Int. Appl., 28 pp.
 CODEN: PIXXD2
 DT Patent
 LA German
 IC ICM G01N033-58
 CC 9-1 (Biochemical Methods)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002056023	A1	20020718	WO 2002-EP337	20020115 <--
	W: JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,				

PT, SE, TR
 DE 10101576 A1 20020912 DE 2001-10101576 20010115 <--
 PRAI DE 2001-10101576 A 20010115 <--
 AB The invention relates to an optical **sensor** for determining at least one parameter in a sample. The optical **sensor** comprises an **indicator** material responding to the parameter and having a short decay time and, a reference material not responding to the parameter and having a long decay time. The optical **sensor** detects the measuring signal **indicating** the parameter to be detected on the basis of the luminescence responses of the **indicator** and the reference material that are commonly detected. The **indicator** and the reference material are immobilized on a common support. The layer facing the sample of the **indicator** material and of the reference material is covered by a layer that allows contact between the **indicator** material and the sample but is substantially impermeable to the light used for exciting the **indicator** and the reference material. The layer prevents the sample from being influenced by the excitation light, thereby improving the measuring **sensitivity** of the **sensor**.
 ST optical **sensor** array **indicator** ref material
 IT Blood analysis
 Body fluid
 Culture media
Fluorescent dyes
Fluorescent indicators
 Fluorometry
 Immobilization, molecular or cellular
Optical sensors
 Soot
 Standard substances, analytical
 Transparency
 pH
 (optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
 IT **Polymers**, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
 IT Transition metal complexes
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
 IT **Fluoropolymers**, uses
 RL: DEV (Device component use); USES (Uses)
 (optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
 IT Oxides (inorganic), uses
 RL: DEV (Device component use); USES (Uses)
 (optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
 IT **Polysiloxanes**, uses
 RL: DEV (Device component use); USES (Uses)
 (optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
 IT Polyurethanes, uses
 RL: DEV (Device component use); USES (Uses)
 (optical **sensors** and **sensor** arrays comprising **indicators** and reference substances)
 IT 7439-88-5D, Iridium, complexes with α -diimine ligands 7440-04-2D, Osmium, complexes with α -diimine ligands **7440-06-4D**, **Platinum**, complexes with α -diimine ligands 7440-15-5D, Rhenium, complexes with α -diimine ligands 7440-16-6D, Rhodium, complexes with α -diimine ligands 7440-18-8D, Ruthenium, complexes with α -diimine ligands

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(luminescence **dyes**; optical **sensors** and
sensor arrays comprising **indicators** and reference
substances)

IT 124-38-9, Carbon dioxide, analysis
7439-93-2, Lithium, analysis 7439-95-4, Magnesium, analysis 7440-09-7,
Potassium, analysis 7440-23-5, Sodium, analysis 7440-70-2, Calcium,
analysis 7782-44-7, Oxygen, analysis 16887-00-6,
Chloride, analysis

RL: ANT (Analyte); ANST (Analytical study)
(optical **sensors** and **sensor** arrays comprising
indicators and reference substances)

IT 9001-37-0, Glucose oxidase 9028-72-2, Lactate oxidase

RL: ARG (Analytical reagent use); DEV (Device component use); ANST
(Analytical study); USES (Uses)
(optical **sensors** and **sensor** arrays comprising
indicators and reference substances)

IT 1332-37-2, Iron oxide, uses 9002-84-0, Teflon 13463-67-7, Titanium
dioxide, uses

RL: DEV (Device component use); USES (Uses)
(optical **sensors** and **sensor** arrays comprising
indicators and reference substances)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Avl Medical Instr; EP 0907074 A 1999 HCAPLUS

(2) Bentsen, J; US 5462879 A 1995 HCAPLUS

(3) Groger, H; US 5577137 A 1996 HCAPLUS

(4) Klimant, I; DE 19829657 A 1999 HCAPLUS

(5) Leiner, M; US 5114676 A 1992 HCAPLUS

(6) Pease, J; US 5618732 A 1997 HCAPLUS

IT 7440-06-4D, Platinum, complexes with α -diimine
ligands

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(luminescence **dyes**; optical **sensors** and
sensor arrays comprising **indicators** and reference
substances)

RN 7440-06-4 HCAPLUS

CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

IT 124-38-9, Carbon dioxide, analysis

7782-44-7, Oxygen, analysis

RL: ANT (Analyte); ANST (Analytical study)
(optical **sensors** and **sensor** arrays comprising
indicators and reference substances)

RN 124-38-9 HCAPLUS

CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)

O=C=O

RN 7782-44-7 HCAPLUS

CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O=O

L94 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2001:713656 HCAPLUS
 DN 135:251129
 ED Entered STN: 28 Sep 2001
 TI **Colorimetric** artificial nose having an array of **dyes**
 and method for artificial olfaction
 IN Suslick, Kenneth S.; Rakow, Neal A.; Sen, Avijit
 PA Board of Trustees of the University of Illinois, USA
 SO PCT Int. Appl., 53 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM G01N021-03
 ICS G01N021-27; G01N021-29; G01N021-75
 CC 80-2 (Organic Analytical Chemistry)
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2001071318	A1	20010927	WO 2001-US9092	20010321	
	W:			AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
	RW:			GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG		
	US 6368558	B1	20020409	US 2000-532125	20000321	
	US 6495102	B1	20021217	US 2000-705329	20001103	
	EP 1274983	A1	20030115	EP 2001-920627	20010321	
	R:			AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR		
	US 2003166298	A1	20030904	US 2002-279701	20021024	
PRAI	US 2000-532125	A	20000321			
	US 2000-705329	A	20001103			
	WO 2001-US9092	W	20010321			
AB	The present invention involves an artificial nose having an array comprising at least a 1st dye and a 2nd dye in combination and having a distinct spectral response to an analyte. In one embodiment, the 1st and 2nd dyes are from the group comprising porphyrin, chlorin, chlorophyll, phthalocyanine, or salen. In a further embodiment, the 1st and 2nd dyes are metalloporphyrins. The present invention is particularly useful in detecting metal ligating vapors. Further, the array of the present invention can be connected to a wavelength sensitive light detecting device.					
ST	colorimetric artificial nose array dye olfaction					
IT	Colorimetric indicators					
	Colorimetry					
	Gas analysis					
	Gas sensors					
	Olfaction					
	Optical sensors					
	(colorimetric artificial nose having array of metalloporphyrin indicators and method for artificial olfaction)					
IT	Metalloporphyrins					
	RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (colorimetric artificial nose having array of metalloporphyrin indicators and method for artificial olfaction)					
IT	Fluoropolymers, analysis					
	Polysiloxanes, analysis					
	RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST					

(Analytical study); USES (Uses)
(colorimetric artificial nose having array of metalloporphyrin
indicators and method for artificial olfaction)

IT 64-17-5, Ethanol, analysis 67-64-1, Acetone, analysis 67-66-3,
Chloroform, analysis 68-12-2, Dimethylformamide, analysis 71-43-2,
Benzene, analysis 75-05-8, Acetonitrile, analysis 75-09-2, Methylene
chloride, analysis 108-91-8, Cyclohexylamine, analysis 109-06-8,
2-Methylpyridine 109-73-9, n-Butylamine, analysis 109-99-9,
Tetrahydrofuran, analysis 110-86-1, Pyridine, analysis 111-26-2,
Hexylamine 111-31-9, 1-Hexanethiol 111-47-7, Dipropyl sulfide
111-86-4, n-Octylamine 121-45-9, Trimethyl phosphite 122-52-1,
Triethyl phosphite 998-40-3, Tri-n-butylphosphine 1322-36-7,
Dodecanethiol

RL: ANT (Analyte); ANST (Analytical study)
(colorimetric artificial nose having array of metalloporphyrin
indicators and method for artificial olfaction)

IT 14074-80-7, 5,10,15,20-Tetraphenylporphyrinato zinc(II) 14172-90-8,
5,10,15,20-Tetraphenylporphyrinato cobalt(II) 14172-91-9,
5,10,15,20-Tetraphenylporphyrinato copper(II) 14641-64-6 29484-63-7,
5,10,15,20-Tetraphenylporphyrinato iron(III) 36965-71-6,
5,10,15,20-Tetrakis(pentafluorophenyl)porphyrinato iron(III) chloride
38414-01-6, 5,10,15,20-Tetraphenylporphyrinato cobalt(III) 59388-92-0,
5,10,15,20-Tetraphenylporphyrinato manganese(III) 63692-18-2,
5,10,15,20-Tetraphenylporphyrinato chromium(III) 67574-57-6,
5,10,15,20-Tetraphenylporphyrinato tin (IV) 79231-60-0,
5,10,15,20-Tetraphenylporphyrinato ruthenium(II) 185460-51-9,
5,10,15,20-Tetrakis(2',6'-dihydroxyphenyl)porphyrinatozinc(II)
316803-86-8, 5-Phenyl-10,15,20-tris(2',6'-dihydroxyphenyl)porphyrinatozinc
(II) 316803-89-1, 5-(Phenyl)-10,15,20-trikis(2',6'-
disilanyloxyphenyl)porphyrinatozinc(II) 316803-93-7,
5,10,15-Trikis(2,6-**disilanyloxyphenyl**)-20-(2-hydroxy-6-
silyloxyphenyl)porphyrinatozinc(II) 316803-95-9, 5,10,15,20-
Tetrakis(2',6'-**disilanyloxyphenyl**)porphyrinatozinc(II)

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(colorimetric artificial nose having array of metalloporphyrin
indicators and method for artificial olfaction)

IT 146997-20-8 361191-65-3

RL: ARG (Analytical reagent use); DEV (Device component use); ANST
(Analytical study); USES (Uses)
(colorimetric artificial nose having array of metalloporphyrin
indicators and method for artificial olfaction)

IT 84-69-5, Di-iso-butylphthalate 9002-84-0, Teflon 9003-53-6,
Polystyrene 9016-00-6, di-Me **siloxane**, SRU
31900-57-9, **Dimethylsilanediol homopolymer**

RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST
(Analytical study); USES (Uses)
(colorimetric artificial nose having array of metalloporphyrin
indicators and method for artificial olfaction)

IT 100-52-7, Benzaldehyde, reactions 109-97-7, Pyrrole 3392-97-0,
2,6-Dimethoxybenzaldehyde 18162-48-6, Chloro-tert-
butyldimethylsilane

RL: RCT (Reactant); RACT (Reactant or reagent)
(colorimetric artificial nose having array of metalloporphyrin
indicators and method for artificial olfaction)

IT 145363-07-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(colorimetric artificial nose having array of metalloporphyrin
indicators and method for artificial olfaction)

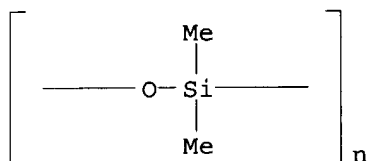
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

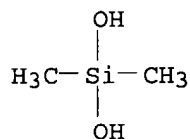
(1) Ackley; US 5489988 A 1996 HCAPLUS

(2) Bard; US 6140138 A 2000 HCAPLUS

(3) Neuschafer; US 6078705 A 2000 HCAPLUS
 (4) Silver; US 5733506 A 1998 HCAPLUS
 (5) Therien; US 5955603 A 1999 HCAPLUS
 (6) Walt; US 5512490 A 1996 HCAPLUS
 (7) Zhang; US 5786219 A 1998 HCAPLUS
 IT 9016-00-6, di-Me siloxane, SRU 31900-57-9,
Dimethylsilanediol homopolymer
 RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST
 (Analytical study); USES (Uses)
 (colorimetric artificial nose having array of metalloporphyrin
indicators and method for artificial olfaction)
 RN 9016-00-6 HCAPLUS
 CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



RN 31900-57-9 HCAPLUS
 CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)
 CM 1
 CRN 1066-42-8
 CMF C2 H8 O2 Si



L94 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1999:779238 HCAPLUS
 DN 132:20746
 ED Entered STN: 09 Dec 1999
 TI **Sensor** composition for the detection of microorganisms in a
 sample via respiratory **oxygen**
 IN Gentle, Thomas M., Jr.; Yeh, Ming-Hsiung
 PA **Becton, Dickinson and Company, USA**
 SO U.S., 6 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM C08K005-34
 NCL 524092000
 CC 9-1 (Biochemical Methods)
 Section cross-reference(s): 10

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5998517	A	19991207	US 1998-92689	19980605
	EP 962535	A1	19991208	EP 1999-109191	19990510
	EP 962535	B1	20030827		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,

IE, SI, LT, LV, FI, RO

CA 2272043	AA 19991205	CA 1999-2272043	19990513
JP 2000004898	A2 20000111	JP 1999-160156	19990607

PRAI US 1998-92689 A 19980605

AB The present invention relates to a composition for the detection of the growth of respiring microorganisms in a sample, which comprises: (a) tris(4,7-diphenyl-10-phenanthroline)ruthenium dichloride pentahydrate(sic); (b) a hydroxyl functional group; (c) an organosilicon **polymer**; (d) an organohydrogensilicon compound; and (e) a **catalyst**; and a method for preparing said composition

ST **oxygen sensor** homogeneous microorganism clin analysis

IT Microbiology

(clin.; **sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)

IT **Gas sensors**

(**oxygen**; **sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)

IT **Catalysts**

Crosslinking agents

Fluorometry

Microorganism

Polymerization

(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)

IT **Polysiloxanes**, uses

RL: DEV (Device component use); USES (Uses)

(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)

IT 7440-21-3D, Silicon, derivative, uses

RL: DEV (Device component use); USES (Uses)

(SF201 and SF205; **sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)

IT **7782-44-7, Oxygen**, analysis

RL: ANT (Analyte); BOC (Biological occurrence); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence)

(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)

IT 21329-70-4

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)

IT 64-17-5, Ethanol, analysis 112-43-6, 10-Undecenyl alcohol 765-12-8, 3,6,9,12-Tetraoxatetradeca-1,13-diene 1343-98-2D, Silicic acid, organosilyl derivs.

RL: ARU (Analytical role, unclassified); ANST (Analytical study)

(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)

IT 13463-67-7, Titanium dioxide, analysis 70331-94-1, Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, (1,2-dioxo-1,2-ethanediyl)bis(imino-2,1-ethanediyl) ester

RL: ARU (Analytical role, unclassified); MOA (Modifier or additive use); ANST (Analytical study); USES (Uses)

(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)

IT 7440-06-4, **Platinum**, uses

RL: CAT (Catalyst use); USES (Uses)

(**sensor** composition for detection of microorganisms in a sample via respiratory **oxygen**)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Baardman; US 5670611 1997 HCAPLUS

(2) Johnson; US 4022751 1977 HCAPLUS

(3) Williams; US 4396734 1983 HCAPLUS
 IT 7782-44-7, **Oxygen**, analysis
 RL: ANT (Analyte); BOC (Biological occurrence); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence)
 (sensor composition for detection of microorganisms in a sample via respiratory **oxygen**)
 RN 7782-44-7 HCAPLUS
 CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O=O

L94 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1999:487458 HCAPLUS
 DN 131:124682
 ED Entered STN: 06 Aug 1999
 TI Optical **sensors** with reflective materials and methods for producing such optical **sensors**
 IN Barnard, Steven M.; Collins, Thomas C.; Mason, Richard W.; Slovacek, Rudolf E.; Cudmore, Susan L.; Munkholm, Christiane; Sullivan, Kevin J.
 PA Bayer Corporation, USA
 SO PCT Int. Appl., 49 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM G01N021-64
 CC 79-2 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 9

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9937997	A1	19990729	WO 1999-IB47	19990118 <--
	W:				
	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW:				
	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6254831	B1	20010703	US 1998-9917	19980121 <--
	CA 2318948	AA	19990729	CA 1999-2318948	19990118 <--
	AU 9917779	A1	19990809	AU 1999-17779	19990118 <--
	EP 1051607	A1	20001115	EP 1999-900082	19990118 <--
	R:				
	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2002501191	T2	20020115	JP 2000-528856	19990118 <--
	US 2001012539	A1	20010809	US 2001-823734	20010330 <--
PRAI	US 1998-9917	A1	19980121 <--		
	WO 1999-IB47	W	19990118 <--		

AB Provided is an optical **sensor** including a support and a detection layer, wherein the detection layer includes: (a) a luminescent material wherein the luminescence intensity of the luminescent material varies as the amount of an analyte varies; (b) a reflective material having a highly efficient reflectance of the wavelengths of excitation and of emission of the luminescent material; and (c) a **polymeric** binder to support and hold together the luminescent material and the reflective material. Such an optical **sensor** can be advantageously used in the detection of **gaseous**, ionic, and nonionic analytes in highly

scattering samples. Also provided are methods for the manufacture of such optical **sensors**.

ST optical **sensor** reflective layer

IT Polyamides, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(acrylic; fabrication and applications of optical **sensors** with reflective materials)

IT Acrylic **polymers**, analysis
Polyamides, analysis
Polycarbonates, analysis
Polyesters, analysis
Polyimides, analysis
Polyolefins
Polysiloxanes, analysis
Polyurethanes, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(binder; fabrication and applications of optical **sensors** with reflective materials)

IT Blood analysis
(blood anal. by optical **sensors** with reflective materials)

IT Binders
Fluorescent substances
Luminescence
Luminescent substances
Optical reflectors
Optical sensors
Pigments, nonbiological
Plastic films
Polymer-supported reagents
(fabrication and applications of optical **sensors** with reflective materials)

IT Aminoplasts
Polyesters, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(fabrication and applications of optical **sensors** with reflective materials)

IT **Gas analysis**
Optical gas sensors
(**gas** analyte determination by optical **gas sensor** with reflective materials)

IT Acrylic **polymers**, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(polyamide-; fabrication and applications of optical **sensors** with reflective materials)

IT Alkadienes
Nitriles, analysis
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(**polymers**, binder; fabrication and applications of optical **sensors** with reflective materials)

IT 9002-86-2D, Polyvinyl chloride, derivs. 9002-89-5D, Polyvinyl alcohol, derivs. 9004-57-3, Ethyl cellulose 129219-08-5, N,N-Dimethylacrylamide-N-tert-butylacrylamide **copolymer**
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(binder; fabrication and applications of optical **sensors** with reflective materials)

IT 31248-39-2, **Platinum** octaethyl porphyrin
RL: ARG (Analytical reagent use); DEV (Device component use); ANST

(Analytical study); USES (Uses)
(fabrication and applications of optical **sensors** with reflective materials)

IT 1309-48-4, Magnesium oxide (MgO), analysis 1309-64-4, Antimony oxide (Sb2O3), analysis 1314-13-2, Zinc oxide (ZnO), analysis 7727-43-7, Barium sulfate (BaSO4) 9003-53-6D, Polystyrene, derivs. 9011-05-6 13463-67-7, Titanium oxide (TiO2), analysis 25038-59-9, analysis 26519-58-4, Ethylhexylmethacrylate-methylmethacrylate **copolymer**
RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
(fabrication and applications of optical **sensors** with reflective materials)

IT 2052-49-5, Tetrabutylammonium hydroxide 112803-18-6, Hydroxypyrenetrisulfonic acid
RL: NUU (Other use, unclassified); USES (Uses)
(fabrication and applications of optical **sensors** with reflective materials)

IT 124-38-9, **Carbon dioxide**, analysis 7664-41-7, Ammonia, analysis 7782-44-7, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**gas** analyte determination by optical **gas sensor** with reflective materials)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Abbott Lab; EP 0352610 A 1990 HCAPLUS
(2) Anon; ANALYTICAL CHEMISTRY 1995, P3160
(3) Azhar, A; US 5260195 A 1993 HCAPLUS
(4) Bedell, S; US 3662802 A 1972 HCAPLUS
(5) Christiane, M; US 5506148 A 1996 HCAPLUS
(6) Churhouse, S; US 5310525 A 1994 HCAPLUS
(7) Foos, J; US 5387329 A 1995 HCAPLUS
(8) Miles Lab; EP 0249851 A 1987 HCAPLUS
(9) Pierce, Z; US 4381921 A 1983 HCAPLUS

IT 124-38-9, **Carbon dioxide**, analysis 7782-44-7, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**gas** analyte determination by optical **gas sensor** with reflective materials)

RN 124-38-9 HCAPLUS
CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)

O=C=O

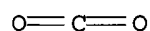
RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O=O

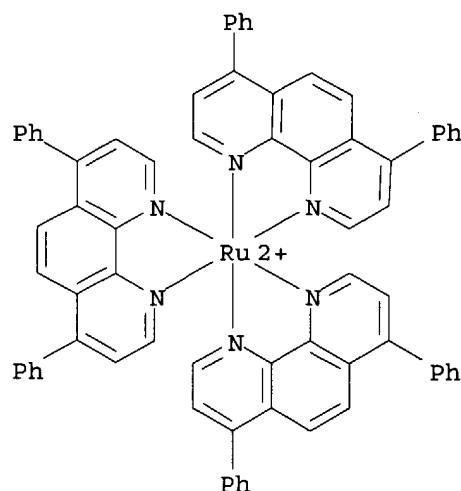
L94 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:342393 HCAPLUS
DN 131:94576
ED Entered STN: 04 Jun 1999
TI Development of **fluorescent** fiber-optic single **polymer** membrane **sensors** for simultaneous ratiometric detection of **oxygen** and **carbon dioxide** in biological systems
AU Dourado, Sunil; Kopelman, Raoul

- CS Department of Chemistry, University of Michigan, Ann Arbor, MI,
48109-2083, USA
- SO Proceedings of SPIE-The International Society for Optical Engineering (1999), 3540 (Chemical, Biochemical, and Environmental Fiber Sensors X), 224-234
CODEN: PSISDG; ISSN: 0277-786X
- PB SPIE-The International Society for Optical Engineering
- DT Journal
- LA English
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 79, 80
- AB **O- and CO2- sensitive fluorescent indicators** are incorporated into a **polymeric** membrane for their detection by ratiometric **fluorescence** measurements. **O** is measured by **fluorescence** quenching of **Ru**, and **Pt dyes**. **CO2** is monitored by tracking the change in the **fluorescence** emission spectrum of a **pH indicator dye** as the **gas** diffuses through the **polymer** membrane and interacts with the **dye**. The detection principle is the **pH** change induced in the membrane due to the influx of **CO2**. The **indicator dye** studied is **HPTS**. The **polymer** membranes are made of silicone or polystyrene.
- ST **fluorescent fiber membrane sensor oxygen carbon dioxide biol**
- IT **Fluorescence**
Fluorescence quenching
Membranes, nonbiological
Optical fibers
Optical sensors
(development of **fluorescent** fiber-optic single **polymer** membrane **sensors** for simultaneous ratiometric detection of **oxygen** and **carbon dioxide** in biol. systems)
- IT **Polysiloxanes, uses**
RL: DEV (Device component use); USES (Uses)
(development of **fluorescent** fiber-optic single **polymer** membrane **sensors** for simultaneous ratiometric detection of **oxygen** and **carbon dioxide** in biol. systems)
- IT **124-38-9, Carbon dioxide, analysis**
17778-80-2, Oxygen atom, analysis
RL: ANT (Analyte); ANST (Analytical study)
(development of **fluorescent** fiber-optic single **polymer** membrane **sensors** for simultaneous ratiometric detection of **oxygen** and **carbon dioxide** in biol. systems)
- IT **3084-69-3D, tridodecylmethylammonium salt** 9003-53-6, **Polystyrene** 9011-14-7, **PMMA 36309-88-3** 45313-91-5D, salt with **8-hydroxypyrene-1,3,6-trisulfonate trisodium** 52064-56-9
RL: DEV (Device component use); USES (Uses)
(development of **fluorescent** fiber-optic single **polymer** membrane **sensors** for simultaneous ratiometric detection of **oxygen** and **carbon dioxide** in biol. systems)
- RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
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 - (11) Leiner, M; Sensors and Actuators B 1995, V29, P169
 - (12) McDonagh, C; Analytical Chemistry 1998, V70, P45 HCAPLUS
 - (13) Michael, K; Analytical Chemistry 1998, V70, P1242 HCAPLUS
 - (14) Mills, A; Analyst 1993, V118, P839 HCAPLUS
 - (15) Mills, A; Analyst 1997, V122, P63 HCAPLUS
 - (16) Mills, A; Analytical Chemistry 1992, V64, P1383 HCAPLUS
 - (17) Mills, A; Analytical Chemistry 1997, V69, P4653 HCAPLUS
 - (18) Mills, A; Sensors and Actuators B 1997, V38-39, P419
 - (19) Papkovsky, D; Analytical Chemistry 1995, V67, P4112 HCAPLUS
 - (20) Papkovsky, D; Sensors and Actuators B 1995, V29, P213
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 - (27) Weigl, B; Analytica Chimica Acta 1995, V302, P249 HCAPLUS
 - (28) Weigl, B; Journal of biotechnology 1994, V32, P127 HCAPLUS
 - (29) Wolfbeis, O; Analytical Chemistry 1988, V60, P2028 HCAPLUS
 - (30) Xu, W; Analytical Chemistry 1994, V66, P4133 HCAPLUS
- IT 124-38-9, **Carbon dioxide**, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (development of **fluorescent** fiber-optic single
polymer membrane **sensors** for simultaneous ratiometric
 detection of **oxygen** and **carbon dioxide** in
 biol. systems)
- RN 124-38-9 HCAPLUS
- CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)



- IT 36309-88-3
 RL: DEV (Device component use); USES (Uses)
 (development of **fluorescent** fiber-optic single
polymer membrane **sensors** for simultaneous ratiometric
 detection of **oxygen** and **carbon dioxide** in
 biol. systems)
- RN 36309-88-3 HCAPLUS
- CN Ruthenium(2+), tris(4,7-diphenyl-1,10-phenanthroline- κ N1, κ N10)-
 , dichloride, (OC-6-11)- (9CI) (CA INDEX NAME)



● 2 Cl^-

L94 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1998:91278 HCAPLUS
 DN 128:187935
 ED Entered STN: 18 Feb 1998
 TI Development of luminescence-based **oxygen sensor**
 AU Zhang, Minquan; Chen, Huanqin; Huang, Guoxian
 CS Institute of Chemical Engineering, South China University of Science and
 Technology, Canton, 510641, Peop. Rep. China
 SO Fenxi Shiyanshi (1997), 16(6), 10-14
 CODEN: FENSE4; ISSN: 1000-0720
 PB Beijing Daxue Chubanshe
 DT Journal
 LA Chinese
 CC 79-2 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 73
 AB An **O sensor** based on **fluorescence** quenching
 of Ru complex was developed. A novel method for the preparation of an
O sensing film was proposed. The **sensing**
 material $[\text{Ru}(\text{ph}_2\text{phen})_3](\text{ClO}_4)_2$ was adsorbed on the surface of amorphous
 SiO_2 particles and then immobilized on a silicone rubber film.
 The **sensing** element was designed without direct contact with
 samples. The **sensor** has high **sensitivity**, rapid
 response, good stability, and high efficiency.
 ST **oxygen sensor fluorescence** quenching
 IT Mud
 (Active; development of luminescence-based **oxygen**
sensor)
 IT **Fluorescence** quenching
Gas analysis
Optical gas sensors
Optical gas sensors
 (development of luminescence-based **oxygen sensor**)
 IT **Polysiloxanes, uses**
 RL: DEV (Device component use); USES (Uses)
 (development of luminescence-based **oxygen sensor**)
 IT **7782-44-7, Oxygen**, analysis
 RL: ANT (Analyte); ANST (Analytical study)

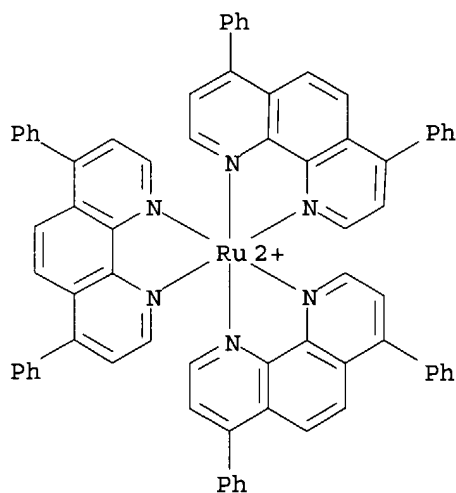
(development of luminescence-based **oxygen sensor**)
 IT **75213-31-9**
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (development of luminescence-based **oxygen sensor**)
 IT 7440-02-0, Nickel, analysis 7440-47-3, Chromium, analysis
 RL: ARU (Analytical role, unclassified); PRP (Properties); ANST
 (Analytical study)
 (development of luminescence-based **oxygen sensor**)
 IT **7631-86-9, Silica**, uses
 RL: DEV (Device component use); USES (Uses)
 (development of luminescence-based **oxygen sensor**)
 IT **7782-44-7, Oxygen**, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (development of luminescence-based **oxygen sensor**)
 RN 7782-44-7 HCAPLUS
 CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O=O

IT **75213-31-9**
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (development of luminescence-based **oxygen sensor**)
 RN 75213-31-9 HCAPLUS
 CN Ruthenium(2+), tris(4,7-diphenyl-1,10-phenanthroline-κN1,κN10)-
 , (OC-6-11)-, diperchlorate (9CI) (CA INDEX NAME)

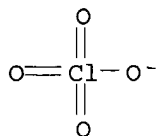
CM 1

CRN 63373-04-6
 CMF C72 H48 N6 Ru
 CCI CCS

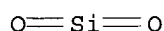


CM 2

CRN 14797-73-0
 CMF Cl O4



IT 7631-86-9, Silica, uses
 RL: DEV (Device component use); USES (Uses)
 (development of luminescence-based oxygen sensor)
 RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L94 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1997:262508 HCAPLUS
 DN 126:329666
 ED Entered STN: 24 Apr 1997
 TI Simultaneous monitoring of pH, CO2 and O2 using an
 optical imaging fiber
 AU Ferguson, Jane A.; Healey, Brian G.; Bronk, Karen S.; Barnard, Steven M.;
 Walt, David R.
 CS Dep. Chem., Tufts Univ., Medford, MA, 02155, USA
 SO Analytica Chimica Acta (1997), 340(1-3), 123-131
 CODEN: ACACAM; ISSN: 0003-2670
 PB Elsevier
 DT Journal
 LA English
 CC 17-1 (Food and Feed Chemistry)
 Section cross-reference(s): 9, 16, 73
 AB The interdependence of pH, CO2, and O2 during chemical
 and biochem. processes has driven the need to monitor them simultaneously,
 continuously, and in situ, to exert better control over such reactions.
 We present the fabrication and performance of a multi-analyte imaging
 fiber sensor that allows pH, CO2, and O2 to
 be monitored simultaneously with rapid response. Sensing
 elements are fabricated by covalently immobilizing fluorescent
 indicators within polymer matrixes via
 photopolymer., resulting in the formation of distinct regions of
 analyte-sensitive polymer at the fiber's distal end.
 The multianalyte sensor's working range is 0-100% for O2
 and 0-10% for CO2 in the pH range 5.5-7.5. The sensor
 was used to monitor the pH, CO2, and O2 changes during
 beer fermentation
 ST fiber optic sensor multianalyte beer fermn; carbon
 dioxide detn sensor beer fermn; oxygen detn
 sensor beer fermn; pH detn sensor beer fermn
 IT Beer
 (fermentation; pH and CO2 and O2 simultaneous monitoring
 with fiber optic sensor)
 IT Beer analysis
 Charge coupled devices
 Electrodes
 Fermentation
 Fiber optic sensors
 Fluorescence quenching
 Optical fibers
 Worts

pH

(pH and CO2 and O2 simultaneous monitoring with
fiber optic **sensor**)IT **Polysiloxanes, analysis**RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST
(Analytical study); USES (Uses)(pH and CO2 and O2 simultaneous monitoring with
fiber optic **sensor**)IT **124-38-9, Carbon dioxide, analysis****7782-44-7, Oxygen, analysis**

RL: ANT (Analyte); ANST (Analytical study)

(pH and CO2 and O2 simultaneous monitoring with
fiber optic **sensor**)IT **63373-04-6**

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(pH and CO2 and O2 simultaneous monitoring with
fiber optic **sensor**)

IT 53413-37-9P

RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST

(Analytical study); PREP (Preparation); USES (Uses)

(pH and CO2 and O2 simultaneous monitoring with
fiber optic **sensor**)

IT 33410-59-2, PolyHEMA

RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST
(Analytical study); USES (Uses)(pH and CO2 and O2 simultaneous monitoring with
fiber optic **sensor**)

IT 814-68-6, Acryloyl chloride 3326-34-9

RL: RCT (Reactant); RACT (Reactant or reagent)

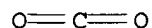
(pH and CO2 and O2 simultaneous monitoring with
fiber optic **sensor**)RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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 - (4) Barnard, S; Science 1991, V251, P927 MEDLINE
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 - (26) Wolfbeis, O; Anal Chem 1988, V60, P2028 HCAPLUS
 - (27) Wolfbeis, O; Fiber Optic Chemical Sensors and Biosensors 1991, V1 and 2
 - (28) Xu, W; Anal Chem 1994, V66, P4133 HCAPLUS
- IT **124-38-9, Carbon dioxide, analysis**
7782-44-7, Oxygen, analysis

RL: ANT (Analyte); ANST (Analytical study)
(pH and CO₂ and O₂ simultaneous monitoring with
fiber optic **sensor**)

RN 124-38-9 HCAPLUS

CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)



RN 7782-44-7 HCAPLUS

CN Oxygen (8CI, 9CI) (CA INDEX NAME)

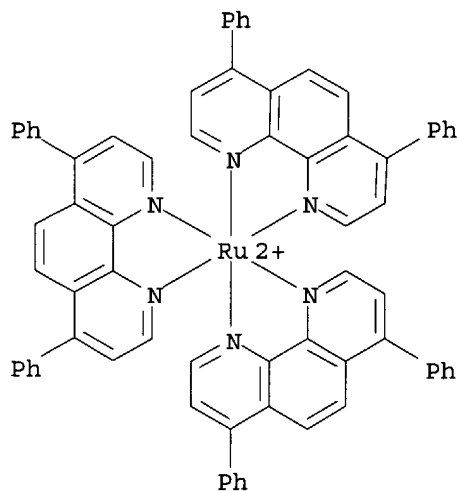


IT 63373-04-6

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(pH and CO₂ and O₂ simultaneous monitoring with
fiber optic **sensor**)

RN 63373-04-6 HCAPLUS

CN Ruthenium(2+), tris(4,7-diphenyl-1,10-phenanthroline-κN1,κN10)-
, (OC-6-11)- (9CI) (CA INDEX NAME)



L94 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1995:950069 HCAPLUS

DN 124:104813

ED Entered STN: 29 Nov 1995

TI Selection of silicone **polymer matrix** for optical
gas sensing

AU He, Huarui; Fraatz, Robert J.; Leiner, Marc J. P.; Rehn, Margit M.; Tusa,
James K.

CS AVL BioSense Corporation, 33 Mansell Court, Roswell, GA, 30076, USA

SO Sensors and Actuators, B: Chemical (1995), B29(1-3), 246-50

CODEN: SABCEB; ISSN: 0925-4005

PB Elsevier

DT Journal

LA English

CC 79-2 (Inorganic Analytical Chemistry)

Section cross-reference(s): 38

AB The **oxygen** quenching behavior of a transition metal complex of

ruthenium, adsorbed on **silica** gel carrier beads entrapped in various types of silicone **polymers**, is studied. The dependence of storage conditions and time on the calibration parameters is measured. Results are presented for two silicone cure systems: **silanol-silanol** condensation and vinyl-hydride addition systems.

ST **silicone polymer optical gas sensor**

IT **Gas analysis**

(selection of silicone **polymer matrix** for optical **gas sensing**)

IT **Silica gel, analysis**

Siloxanes and Silicones, analysis

RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)

(selection of silicone **polymer matrix** for optical **gas sensing**)

IT **Sensors**

(**gas, optical**, selection of silicone **polymer matrix** for optical **gas sensing**)

IT **Siloxanes and Silicones, analysis**

RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)

(vinyl, selection of silicone **polymer matrix** for optical **gas sensing**)

IT 17689-77-9, **Ethyltriacetoxysilane**

RL: RCT (Reactant); RACT (Reactant or reagent)

(**crosslinker**; selection of silicone **polymer matrix** for optical **gas sensing**)

IT 81032-58-8

RL: CAT (Catalyst use); USES (Uses)

(**crosslinking catalyst**; selection of silicone **polymer matrix** for optical **gas sensing**)

IT 14323-06-9 23570-43-6, Tris(1,10-phenanthroline)ruthenium(II) dichloride

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(**indicator**; selection of silicone **polymer matrix** for optical **gas sensing**)

IT 7782-44-7, **Oxygen, analysis**

RL: ANT (Analyte); ANST (Analytical study)

(**oxygen** determination by optical **gas sensor** with silicone **polymer**)

IT 9016-00-6D, Di-Me **siloxane**, SRU, trimethylsilyl-terminated and vinyl-terminated and **silanol**-terminated derivs.

31900-57-9D, Dimethylsilanediol homopolymer,

trimethylsilyl-terminated and vinyl-terminated and **silanol**-terminated derivs.

RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)

(selection of silicone **polymer matrix** for optical **gas sensing**)

IT 77-58-7, Dibutyltin dilaurate

RL: CAT (Catalyst use); USES (Uses)

(selection of silicone **polymer matrix** for optical **gas sensing**)

IT 7782-44-7, **Oxygen, analysis**

RL: ANT (Analyte); ANST (Analytical study)

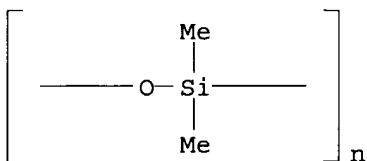
(**oxygen** determination by optical **gas sensor** with silicone **polymer**)

RN 7782-44-7 HCAPLUS

CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O=O

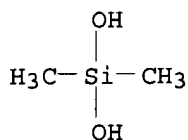
IT 9016-00-6D, Di-Me **siloxane**, SRU, trimethylsilyl-terminated and vinyl-terminated and **silanol**-terminated derivs.
 31900-57-9D, **Dimethylsilanediol homopolymer**, trimethylsilyl-terminated and vinyl-terminated and **silanol**-terminated derivs.
 RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
 (selection of silicone **polymer matrix** for optical **gas sensing**)
 RN 9016-00-6 HCAPLUS
 CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



RN 31900-57-9 HCAPLUS
 CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8
 CMF C2 H8 O2 Si



L94 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1995:842744 HCAPLUS
 DN 123:245637
 ED Entered STN: 10 Oct 1995
 TI Solid state **sensors**
 IN Jovanovic, Misa V.; Markle, David Reed
 PA Biomedical Sensors, Ltd., UK
 SO PCT Int. Appl., 22 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM G01N031-22
 ICS G01N021-77; C08G077-04
 ICA A61B005-00
 CC 79-2 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 9
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9522759	A1	19950824	WO 1995-IB36	19950118 <--
	W: AU, CA, DE, JP, KR, MX				

RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
 CA 2183455 AA 19950824 CA 1995-2183455 19950118 <--
 AU 9513909 A1 19950904 AU 1995-13909 19950118 <--
 EP 745220 A1 19961204 EP 1995-905214 19950118 <--
 EP 745220 B1 20000412

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE
 JP 09502528 T2 19970311 JP 1995-521687 19950118 <--
 JP 2821026 B2 19981105
 AT 191790 E 20000415 AT 1995-905214 19950118 <--
 ZA 9501219 A 19960815 ZA 1995-1219 19950215 <--

PRAI US 1994-197423 A 19940216 <--
 WO 1995-IB36 W 19950118 <--

AB A stabilized bio-inert **sensor** for the determination of an analyte, especially pO₂, pCO₂ and pH, in a medium which comprises a chemical **indicator sensitive** to the analyte in association with a stabilizing substrate formed from a **polymer** which is inert to the medium and analyte and does not affect the **sensitivity** of the **indicator**, which **polymer** is a **cross-linked**, solid silicone rubber formed from a silicone carbinol having a mol. structure compatible with said **indicator**. The **sensor** is suitable for blood anal.

ST solid state **sensor oxygen** detn blood; **sensor carbon dioxide** detn blood

IT Blood analysis
Gas analysis
 pH
 (oxygen and carbon dioxide and pH determination in blood by solid state **sensor** containing silicone rubber)

IT Rubber, silicone, analysis
Siloxanes and Silicones, analysis
 RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
 (oxygen and carbon dioxide and pH determination in blood by solid state **sensor** containing silicone rubber)

IT **Sensors**
 (gas, oxygen and carbon dioxide and pH determination in blood by solid state **sensor** containing silicone rubber)

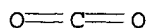
IT 124-38-9, Carbon dioxide, analysis
 7782-44-7, Oxygen, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (oxygen and carbon dioxide and pH determination in blood by solid state **sensor** containing silicone rubber)

IT 143-74-8, Phenol red 17756-58-0, Tetraoctylammonium hydroxide
 36309-88-3, Tris(4,7-diphenyl-1,10-phenanthroline) ruthenium dichloride
 RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
 (oxygen and carbon dioxide and pH determination in blood by solid state **sensor** containing silicone rubber)

IT 168695-48-5 168695-50-9D, trimethylsilyl-terminated 168695-51-0D, trimethylsilyl-terminated
 RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST (Analytical study); USES (Uses)
 (oxygen and carbon dioxide and pH determination in blood by solid state **sensor** containing silicone rubber)

IT 124-38-9, Carbon dioxide, analysis
 7782-44-7, Oxygen, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (oxygen and carbon dioxide and pH determination in blood by solid state **sensor** containing silicone rubber)

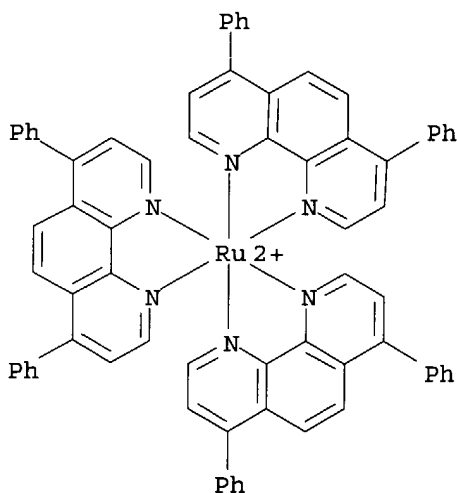
RN 124-38-9 HCAPLUS
 CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)



RN 7782-44-7 HCAPLUS
 CN Oxygen (8CI, 9CI) (CA INDEX NAME)



IT **36309-88-3**, Tris(4,7-diphenyl-1,10-phenanthroline) ruthenium dichloride
 RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
 (oxygen and carbon dioxide and pH determination in blood by solid state **sensor** containing silicone rubber)
 RN 36309-88-3 HCAPLUS
 CN Ruthenium(2+), tris(4,7-diphenyl-1,10-phenanthroline- $\kappa\text{N}1, \kappa\text{N}10$)-, dichloride, (OC-6-11)- (9CI) (CA INDEX NAME)



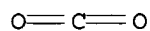
L94 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1994:207584 HCAPLUS
 DN 120:207584
 ED Entered STN: 16 Apr 1994
 TI Method and compositions for manufacture of optical-fiber chemical **microsensors**
 IN Nelson, Alan M.; Soikowski, Carmen L.
 PA Puritan-Bennett Corp., USA
 SO Eur. Pat. Appl., 8 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM G01N021-77
 ICS G01N021-64
 CC 79-2 (Inorganic Analytical Chemistry)

Section cross-reference(s): 9

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 568274	A1	19931103	EP 1993-303162	19930422 <--
	R: DE, FR, GB, IE, IT				
	US 5262192	A	19931116	US 1992-874031	19920427 <--
	CA 2093592	AA	19931028	CA 1993-2093592	19930407 <--
	JP 06074901	A2	19940318	JP 1993-101143	19930427 <--
	US 5326585	A	19940705	US 1993-108108	19930817 <--
PRAI	US 1992-874031		19920427	<--	
AB	The method involves applying an uncured analyte sensing matrix to an optical fiber and crosslinking the sensing matrix in situ on the optical fiber to yield an ion-permeable microsensor which can be used intravascularly to monitor pH, or partial pressures of O ₂ or CO ₂ in blood. The liquid form of the sensing matrix contains a crosslinking agent and a crosslinking inhibitor which can be removed by exposure to elevated temps. to allow the sensing matrix to crosslink and cure as desired, in situ, on the surface of the optical fiber. A liquid crosslinking overcoat layer containing a crosslinking agent and a crosslinking inhibitor which can be removed by exposure to heat can also be applied over the cured sensing matrix .				
ST	optical fiber chem microsensor manuf compn				
IT	Indicators (dyes , for manufacture of optical-fiber chemical microsensors , method and compns. involving)				
IT	Siloxanes and Silicones, uses RL: ANST (Analytical study) (for manufacture of optical-fiber chemical microsensors , method and compns. involving)				
IT	Optical fibers (microsensor containing, method and composition for manufacture of)				
IT	Blood analysis (optical-fiber microsensor for)				
IT	Siloxanes and Silicones, uses RL: USES (Uses) (di-Me, vinyl-terminated, for manufacture of optical-fiber chemical microsensors , method and compns. involving)				
IT	Sensors (miniaturized , chemical, method and composition for manufacture of optical-fiber)				
IT	124-38-9, Carbon dioxide, analysis 7782-44-7, Oxygen, analysis RL: ANT (Analyte); ANST (Analytical study) (determination of, in blood, optical-fiber microsensor for, method and composition for manufacture of)				
IT	127-06-0, Acetone oxime 141-97-9, Ethyl acetoacetate 191-07-1, Coronene 191-48-0, Decacyclene 2321-07-5 2627-95-4, Divinyl tetramethyldisiloxane 11081-15-5, Isooctylphenol 13463-67-7, Titanium dioxide, uses 24801-88-5 27928-00-3, 8-Hydroxy-1,3,6-pyrenetrisulfonic acid 28518-77-6, Acrylamide-hydroxyethyl methacrylate copolymer 65152-07-0, 2,4-Diisobutylphenol 153889-64-6 64-17-5, Ethanol, uses 75-65-0, uses 78-08-0, Vinyltriethoxysilane 88-75-5, o-Nitrophenol 90-05-1, Guaiacol 96-29-7, Methyl ethyl ketone oxime 100-61-8, uses 105-53-3, Diethyl malonate 106-48-9, p-Chlorophenol 108-39-4, uses 108-46-3, 1,3-Benzenediol, uses 108-73-6, Phloroglucinol 108-98-5, Benzenethiol, uses 112-55-0, 1-Dodecanethiol 122-39-4, Diphenyl amine, uses 123-54-6, Acetyl acetone, uses RL: ANST (Analytical study) (for manufacture of optical-fiber chemical microsensors , method and				

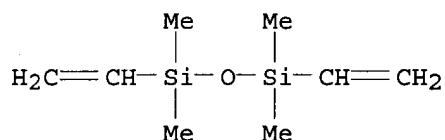
compns. involving)
 IT 124-38-9, Carbon dioxide, analysis
 7782-44-7, Oxygen, analysis
 RL: ANST (Analyte); ANST (Analytical study)
 (determination of, in blood, optical-fiber **microsensor** for, method
 and composition for manufacture of)
 RN 124-38-9 HCAPLUS
 CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)



RN 7782-44-7 HCAPLUS
 CN Oxygen (8CI, 9CI) (CA INDEX NAME)



IT 2627-95-4, Divinyl **tetramethyldisiloxane**
 RL: ANST (Analytical study)
 (for manufacture of optical-fiber chemical **microsensors**, method and
 compns. involving)
 RN 2627-95-4 HCAPLUS
 CN Disiloxane, 1,3-diethenyl-1,1,3,3-tetramethyl- (9CI) (CA INDEX NAME)



L94 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1992:422907 HCAPLUS
 DN 117:22907
 ED Entered STN: 26 Jul 1992
 TI **Dye matrix for water-insensitive tissue
 oxygen sensor**
 IN Oviatt, Henry W., Jr.; Reich, Cary J.; Morehead, Steven R.; Lusk, James R.
 PA Innerspace, Inc., USA
 SO PCT Int. Appl., 34 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM G01N033-00
 CC 9-15 (Biochemical Methods)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9205441	A1	19920402	WO 1991-US6716	19910917 <--
	W: CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
PRAI	US 1990-583415		19900917 <--		
AB	A dye matrix is provided for use in an optical sensor . In the preferred embodiment, sufficient gas- sensitive organometallic aromatic-containing fluorescent dye is dissolved in an organosilane polymer permeable to the gas to measure concns. of oxygen or other gases in body tissue. The polymer contains				

sufficient aromatic substituents to prevent the **dye** from crystallizing and sufficient **crosslinker** to prevent an increase in turbidity in the **dye matrix** in an aqueous environment for up to 72 h. A reference **fluorescent dye** can also be dissolved in the **dye matrix** to aid in screening out the "noise" introduced by muscle movement when the **sensor** is used in a tissue probe, such as a tissue **oxygen** probe.

- ST **siloxane organometallic dye matrix;**
gas analysis siloxane dye matrix;
oxygen analysis siloxane dye matrix
- IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(diethoxy, composition containing, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)
- IT **Polymers, uses**
Siloxanes and Silicones, uses
RL: USES (Uses)
(**fluorescent dye**-containing, for **gas** anal. in aqueous environment)
- IT **Gas analysis**
(**fluorescent dye-siloxane matrix** for, in aqueous environment)
- IT Organometallic compounds
RL: USES (Uses)
(**fluorescent dyes, siloxane matrix** containing, for **gas** anal. in aqueous environments)
- IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(Me Ph, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)
- IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(alkyl, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)
- IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(aminoalkyl, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)
- IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(cyanoalkyl, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)
- IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(di-Me, composition containing, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)
- IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(di-Me, di-Ph, composition containing, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)
- IT **Dyes**
(**fluorescent, siloxane matrix** containing, for **gas** anal. in aqueous environment)
- IT **Siloxanes and Silicones, uses**
RL: USES (Uses)
(haloalkyl, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)
- IT Hydrocarbons, uses
RL: USES (Uses)
(polycyclic, **fluorescent dyes, siloxane matrix** containing, for **gas** anal. in aqueous environments)
- IT 91237-66-0 129-00-0, Pyrene, biological studies
RL: ANST (Analytical study)

AT 132260 E 19960115 AT 1990-108333 19900502 <--
 PRAI US 1989-343423 19890426 <--
 EP 1990-108333 19900502 <--
 AB This method and material uses **indicators**, namely polynuclear
 aroms., or more specifically perylene derivs., together with an
 appropriate **matrix** such as **crosslinked**
polydimethylsiloxane to provide a **sensor** element for
 insertion in a fluid stream, preferably by means of an appropriate system.
 By irradiating the resulting **matrix** with light of a specific
 wavelength or wavelength range, which may or may not be the wavelength of
 maximum absorption, while measuring the **fluorescent** emission over
 at least 2 other specific wavelength ranges, different portions of the
 emission spectrum have been observed to have different **sensitivities**
 to O quenching. In this way, a means is provided for
 referencing the output of **indicators** which employ the phenomenon
 of **fluorescence** quenching which is simple and easily implemented
 in systems and which provides a means of accurate normalization within a
 wide variation in the **fluorescent** emission of the
indicator. This method can be applied to a variety of
indicators and does not require addnl. complex electronics or
 optics associated with the excitation and measurement scheme. Possible
 application to blood anal. is **indicated**.
 ST **oxygen** detn fluid **fluorescence** quenching; fluid
 analysis **oxygen fluorescence** quenching
 IT **Fluorescence** quenching
 (in determination of **oxygen** in fluids, method and material involving)
 IT Blood analysis
Gas analysis
 (oxygen determination in, **fluorescence**-quenching method and
 material for)
 IT **Dyes**
 (fluorescent, in determination of **oxygen** in fluids,
fluorescence-quenching method and material involving)
 IT Aromatic hydrocarbons, uses and miscellaneous
 RL: USES (Uses)
 (polycyclic, in determination of **oxygen** in fluids,
fluorescence-quenching method and material involving)
 IT 7782-44-7, **Oxygen**, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of, in fluids, **fluorescence**-quenching method and
 material for)
 IT 191-07-1, Coronene 198-55-0, Perylene 198-55-0D, Perylene, derivs.
 6596-38-9, Naphtho[8,1,2-abc]coronene
 RL: ANST (Analytical study)
 (in determination of **oxygen** in fluids, **fluorescence**
 -quenching method and material involving)
 IT 7782-44-7, **Oxygen**, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of, in fluids, **fluorescence**-quenching method and
 material for)
 RN 7782-44-7 HCAPLUS
 CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O=O

L94 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1989:54127 HCAPLUS
 DN 110:54127
 ED Entered STN: 17 Feb 1989
 TI Gas sensor

(as **fluorescent dye, siloxane matrix** containing, for **gas** anal. in aqueous environments)

IT 125132-60-7
RL: ANST (Analytical study)
(as reference **fluorescent dye, siloxane matrix** containing, for **gas** anal. in aqueous environments)

IT 141927-76-6
RL: ANST (Analytical study)
(composition containing, **fluorescent dye**-containing, for **gas** anal. in aqueous environment)

IT 7782-44-7, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, in aqueous environments, **fluorescent dye-siloxane matrix** for)

IT 7440-18-8D, Ruthenium, complexes
RL: ANST (Analytical study)
(divalent, as **fluorescent dyes, siloxane matrix** containing, for **gas** anal. in aqueous environments)

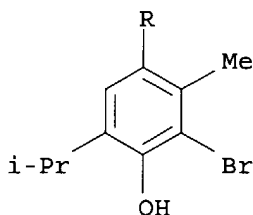
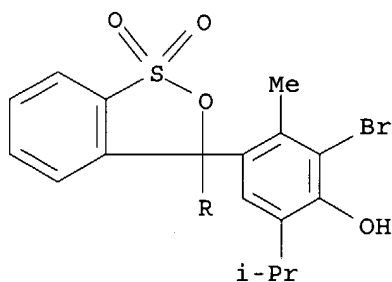
IT 7782-44-7, **Oxygen**, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, in aqueous environments, **fluorescent dye-siloxane matrix** for)

RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O=O

L94 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:622079 HCAPLUS
DN 115:222079
ED Entered STN: 15 Nov 1991
TI Fiber-optic **sensor** for ammonia vapors of variable temperature
AU Potyrailo, R. A.; Golubkov, S. P.; Borsuk, P. S.
CS Spec. Instrum. Res. Inst., Kiev Polytech. Inst., Kiev, 252056, USSR
SO Proceedings of SPIE-The International Society for Optical Engineering (1991), 1572(Int. Conf. Opt. Fibre Sens. China OFS(C) '91, 1991), 434-8
CODEN: PSISDG; ISSN: 0277-786X
DT Journal
LA English
CC 79-2 (Inorganic Analytical Chemistry)
AB A fiber-optic **sensor**, based on the principle of reversible changes in absorption spectrum of a **dye**-film, containing pH-**dye**, entrapped in a **polymer matrix**, was developed for use in **sensing** of ammonia vapors of variable temperature Differences of the absorption spectra of pH-**dye** in water solution and in the **polymer matrix** were investigated. The design of the **sensor** is presented and the exptl. results are discussed.
ST ammonia detn fiber optic **sensor**; Bromothymol Blue fiber optic **sensor** ammonia
IT **Gas analysis**
(ammonia determination in, at variable temperature, fiber-optic **sensor** for)
IT **Dyes**
Polymers, uses and miscellaneous
RL: USES (Uses)
(in ammonia fiber-optic **sensor**)
IT Optical fibers
(**sensor**, for ammonia)
IT **Siloxanes and Silicones, uses and miscellaneous**

RL: USES (Uses)
 (Me Ph, in ammonia fiber-optic **sensor**)
 IT 7664-41-7, Ammonia, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of, fiber-optic **sensor** for)
 IT 76-59-5, Bromothymol Blue
 RL: ANST (Analytical study)
 (**siloxane** containing, in ammonia fiber-optic **sensor**)
 IT 76-59-5, Bromothymol Blue
 RL: ANST (Analytical study)
 (**siloxane** containing, in ammonia fiber-optic **sensor**)
 RN 76-59-5 HCAPLUS
 CN Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis[2-bromo-3-methyl-6-(1-methylethyl)- (9CI) (CA INDEX NAME)



L94 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1991:220395 HCAPLUS
 DN 114:220395
 ED Entered STN: 31 May 1991
 TI **Fluorescence**-quenching method and material for measurement of
oxygen concentration
 IN Divers, George A., III; Hui, Henry K.; Gottlieb, Amos
 PA USA
 SO Can. Pat. Appl., 20 pp.
 CODEN: CPXXEB
 DT Patent
 LA English
 IC ICM G01N021-25
 CC 79-6 (Inorganic Analytical Chemistry)
 Section cross-reference(s): 9
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 2015415	AA	19901026	CA 1990-2015415	19900425 <--
	US 5094959	A	19920310	US 1989-343423	19890426 <--
	JP 03063550	A2	19910319	JP 1990-111579	19900426 <--
	EP 454886	A1	19911106	EP 1990-108333	19900502 <--
	EP 454886	B1	19951227		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE

IN Yafuso, Masao; Suzuki, John K.
 PA Cardiovascular Devices, Inc., USA
 SO Eur. Pat. Appl., 8 pp.
 CODEN: EPXXDW

DT Patent
 LA English
 IC ICM G01N021-64
 ICS A61B005-00

CC 9-1 (Biochemical Methods)

FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 263692	A2	19880413	EP 1987-308883	19871007 <--
	EP 263692	A3	19900418		
	R: DE, FR, GB				
	US 4824789	B1	19960813	US 1986-917912	19861010 <--
PRAI	US 1986-917912		19861010	<--	

AB A **gas sensor** has a 1st aqueous phase composed of a soluble **dye** in a buffer. One or more addnl. agent can be further added to the aqueous phase, e.g. an emulsification enhancement agent. The aqueous phase is

homogenized into a **polymeric** precursor forming an emulsion of the aqueous phase in the **polymeric** precursor. A **catalyst** and a **crosslinking** agent are added and the **polymeric** precursor is allowed to **polymerize** to form an emulsoid of microcompartments of the aqueous phase in a **polymeric** 2nd phase. The microcompartments of the aqueous phase are dispersed through and permanently suspended in the **polymeric** 2nd phase. Application of the **sensor** to the determination of blood **gases** such as **CO2** is indicated. Hydroxypyrene-3,6,8-trisulfonic acid 0.1048, NaHCO3 0.0106, NaCl 0.1284, dextran (mol. weight 500,000) 6.666, and thimerosal 0.02 g were dissolved in 20 g H2O, and 2 mL of the solution was homogenized with 10 g Petrarch PE 1055 (**polydimethoxysilane**) containing a trace amount of a **Pt catalyst** to form an emulsion. **Crosslinker** (1.0 g) was stirred in, and a drop of the emulsion was placed on the end of a 125- μ m diameter fiber optic cable to form a **CO2 gas sensor**. The aqueous phase microcompartments were about 2 μ m in diameter

ST **gas sensor dye polymer** emulsion;
carbon dioxide sensor blood permeation

IT **Gas analysis**
 (determination of, **sensor** containing **dye** solution dispersed in **polymer matrix** for)

IT Optical detectors
 (**dye** solution dispersed in **polymer matrix** in, for **gas anal.**)

IT **Polymers**, uses and miscellaneous
 RL: USES (Uses)

(**dye** solution dispersed in, **gas sensor** containing)

IT Emulsions
 (of **dye** aqueous solution in **polymer matrix**, **gas sensor** containing)

IT **Dyes**
 (**polymer matrix** containing dispersed droplets of aqueous solution of, **gas sensor** containing)

IT **Indicators**
 (**acid-base**, **polymer matrix** containing dispersed aqueous solution of, **gas sensor** containing)

IT **Siloxanes and Silicones**, uses and miscellaneous
 RL: USES (Uses)
 (di-Me, **dye** solution dispersed in, **gas sensor** containing)

IT 124-38-9, Carbon dioxide, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of, **sensor** containing **dye** solution dispersed in
polymer for)

IT 92681-38-4, 1,3,6-Pyrenetrisulfonic acid
 RL: ANST (Analytical study)
 (**polymer matrix** containing dispersed droplets of aqueous
 solution of, **gas sensor** containing)

IT 124-38-9, Carbon dioxide, analysis
 RL: ANT (Analyte); ANST (Analytical study)
 (determination of, **sensor** containing **dye** solution dispersed in
polymer for)

RN 124-38-9 HCAPLUS
 CN Carbon dioxide (8CI, 9CI) (CA INDEX NAME)

O=C=O

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FILE 'WPIX' ENTERED AT 09:24:11 ON 29 JUN 2004

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>>> THE DISPLAY LAYOUT HAS BEEN CHANGED TO ACCOMODATE THE
 NEW FORMAT GERMAN PATENT APPLICATION AND PUBLICATION
 NUMBERS. SEE ALSO:
<http://www.stn-international.de/archive/stnews/news0104.pdf> <<<

=> d all abeq tech abex tot l141

L141 ANSWER 1 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
 AN 2004-072952 [08] WPIX
 CR 2004-013269 [02]; 2004-013270 [02]
 DNN N2004-058699 DNC C2004-030362
 TI Production of **polymer** layers on a transparent support, for use

in **sensors**, e.g. for blood analysis, comprises **coating** the support with a **photopolymerizable** liquid composition and irradiating the liquid through the support.

DC A14 A35 A89 B04 D16 J04 P42 S03
 IN HOENES, J; HORN, C; KNAPPE, W
 PA (HOFF) ROCHE DIAGNOSTICS GMBH
 CYC 1
 PI DE 10221840 A1 20031127 (200408)* 11 B05D007-24
 ADT DE 10221840 A1 DE 2002-10221840 20020516
 PRAI DE 2002-10221840 20020516
 IC ICM B05D007-24
 ICS B05D003-06
 AB DE 10221840 A UPAB: 20040202

NOVELTY - Production (M1) of **polymer** layers on a transparent support comprises **coating** the prepared support with a **photopolymerizable** liquid composition (I), irradiating (I) through the support so as to form a layer of **polymer** with a predetermined thickness, and removing remaining liquid (I).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) apparatus for the production of **polymer** layers, comprising (a) means for holding and possibly moving a support, (b) means for the application of (I), (c) means for irradiating (I) through the support as above and (d) optional means for removing **unpolymerized** (I)

(2) a method (M2) for the production of a **sensor**, by carrying out the process as above (using a composition (I) containing **indicator(s)**) and then mounting the support with the **indicator-containing polymer** layer in a **sensor** (which detects the reaction of the **indicator** with an analyte in a sample).

USE - For the production of **sensors**, preferably optical and/or electrochemical **sensors** with an immobilized **indicator** (possibly an enzyme-coenzyme complex) in the **polymer** layer (claimed). Applications include the determination of physico-chemical parameters (e.g. temperature and/or partial pressure of **gases** such as **oxygen**, **carbon dioxide**, nitrogen oxides etc.) or biochemical parameters (e.g. analytes in biological samples such as body fluids).

ADVANTAGE - A simple method enabling the production of adherent, hydrophilic **polymer** layers of predetermined, uniform thickness on a support.

DESCRIPTION OF DRAWING(S) - **Sensor** produced by the claimed method.

transparent support 1
polymer layer with **indicator** 2
 sample, e.g. blood 3
 light source 4
 detector (e.g. **fluorescence** detector) 5
 optional filter 6

Dwg.1/4

FS CPI EPI GMPI

FA AB; GI; DCN

MC CPI: A10-B06; A11-B05C; A12-E13; B04-B04D5; B04-C03; B04-L01;
B11-C07B3; B11-C08; B11-C08E3; B11-C08E6; B12-K04; B12-K04A;
 D05-H09; D05-H10; J04-B01; J04-C04

EPI: **S03-E04E**; S03-E09E; S03-E14H

TECH UPTX: 20040202

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Supports: At least partly transparent supports with a thickness of at least 5 microns, consisting of plastics, glass or quartz. Preferred Method: Method M1 uses compositions (I) containing at least one **photopolymerizable** substance (especially acrylic monomers, vinylaromatic monomers and/or functionalized polyvinylpyrrolidones) and photoinitiator(s). The

polymer layer has a thickness of not more than 500 (preferably not more than 5) microns, which is controlled by varying the intensity and/or duration of irradiation and/or by adding substances which absorb the **polymerization** light. The resulting **polymer** layer contains **indicator(s)** (preferably macromolecular substances or **catalysts**, especially enzymes) and may also be **crosslinked**, preferably with a macromolecule in the **crosslinked** layer. Irradiation is performed with UV light, and **polymerization** is performed as a continuous process, preferably by applying (I) continuously to one point on a moving support and irradiating it at a second position.

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Method: M2 uses enzymes as **indicators** (optionally in the form of enzyme-coenzyme complexes) with optical and/or electrochemical detection systems. Optical systems comprise a light source for irradiating the **polymer** layer (preferably from the back through the support) and a detector for the emitted light, preferably a **fluorescence** detector.

ABEX UPTX: 20040202

EXAMPLE - A suspension was produced by mixing 2.5 g acrylamide, 0.7 g methylene-bis-acrylamide, 0.05 g 2,2-dimethoxy-2-phenylacetophenone, 5 g glycerol, 1.4 g hydroxyethyl methacrylate, 0.4 g methyl methacrylate, 1 g Crodasinic O solution (pH 8; 0.3 g l) and 0.3 g N,N'-(1,2-dihydroxyethylene)-bis-acrylamide. This suspension (0.5 ml) was mixed with 0.5 ml of a solution of glucose dehydrogenase (100 mg/ml) and homogenized with the aid of ultrasound, then the solution obtained was poured onto corona-treated film and irradiated for 20 minutes through the base film with a conventional UV source; the **polymer** was washed with water and dried to give a layer with a thickness of less than 2 microns. When fresh glucose/NAD+ solution (GKL-3 solution; 300ml/dl glucose, 1 ml/6.4 mg NAD+) was spotted onto the film, strong **fluorescence** was immediately visible under a UV lamp.

L141 ANSWER 2 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 2003-758155 [72] WPIX

DNN N2003-607518 DNC C2003-208346

TI **Sensor** formulation for detection of **gas** composition comprises **fluorophores**, **acid-base indicator chromophore dye**, and **polymeric matrix**.

DC A89 B04 D16 E24 J04 S03

IN MING-HSUING, Y; YEH, M

PA (BECT) BECTON DICKINSON & CO; (YEHM-I) YEH M

CYC 33

PI EP 1327874 A2 20030716 (200372)* EN 10 G01N021-64 <--
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV
MC MK NL PT RO SE SI SK TR

JP 2003262628 A 20030919 (200372) 31 G01N031-00 <--

US 2003133123 A1 20030717 (200372) C12Q001-04 <--

ADT EP 1327874 A2 EP 2003-370 20030110; JP 2003262628 A JP 2003-5019 20030110;

US 2003133123 A1 US 2002-41661 20020110

PRAI US 2002-41661 20020110

IC ICM C12Q001-04; G01N021-64; G01N031-00

ICS C12Q001-06; G01B009-02; G01N021-77; G01N021-78;
G01N031-22

AB EP 1327874 A UPAB: 20031107

NOVELTY - **Sensor** formulation for detection of **gas** composition, comprising at least two **fluorophores**, an **acid-base indicator chromophore dye**, and a **polymeric matrix**, where the **chromophore dye** and the **fluorophores** are mixed within a **polymeric matrix** prior to **polymerization**, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) detecting the presence of **respiring** microorganisms, comprising:

- (a) providing the **sensor** formulation;
 - (b) providing a **fluorescence** reading device having a first **sensor** element and a second **sensor** element, the first element being tuned to the same wavelength of the first **fluorophore** and the second **sensor** element being tuned to the same wavelength of the second **fluorophore**;
 - (c) providing a microorganism for monitoring;
 - (d) exposing the microorganism to the **sensor** formulation in the presence of the reading device, and
 - (e) recording the response of the **sensor** elements to the microorganism; and
- (2) monitoring the effects of a composition on the metabolism of a microorganism, comprising:
- (a) exposing a microorganism to a composition to be tested for its effect on the metabolism of the microorganism;
 - (b) exposing the microorganism to the **sensor** formulation in the presence of the reading device; and
 - (c) recording the response of the first **sensor** element and the second **sensor** element to the microorganism.

USE - For detecting the presence of, and evaluating the metabolic activity of, anaerobic or aerobic microorganisms present in a liquid or semi-solid media. The system can detect and/or monitor the activity or **oxygen** consuming enzymes or enzyme systems as well as the effect of growth inhibiting compounds such as antibiotics on microorganisms.

ADVANTAGE - The system can independently and simultaneously monitor **oxygen** levels and **carbon dioxide** levels in a **gas** composition. The system is **sensitive**, effective and speedy.

Dwg.0/2

FS CPI EPI

FA AB; DCN

MC CPI: **A12-L04B**; B04-F10; B05-A03B; B06-D03; B10-A01; B11-C07B1; B11-C07B3; B11-C10; B12-K04; D05-H09; E11-Q03C; **E24-A05**; **E25-B03**; **E25-D**; **E25-E01**; J04-B01A; J04-C04

EPI: S03-E04D; **S03-E04E**

TECH UPTX: 20031107

TECHNOLOGY FOCUS - CHEMICAL ENGINEERING - Preferred Formulation: The first **fluorophore** responds to changes in the concentration of **oxygen** in a **gas** composition. The **chromophore dye** responds to changes in the concentration of **carbon dioxide** in the **gas** composition to modulate the signal output of the second **fluorophore**. The formulation further comprises two different **silica powders**. The first **powder** has a greater **density** as compared to the lighter **density** second **powder**. The **fluorophore** is coated on **granules** of the first **silica powder** and the second **fluorophore** is coated on the second **silica powder**. The **chromophore dye** is evenly dispersed within the **matrix**. The first **fluorophore** is segregated from the second **fluorophore** within the **polymeric matrix**. The **matrix** comprises at least two **premixture** ingredients, a first **polymer** component and a second **crosslinker** component and optionally a **premixture** ingredients of a **catalyst** and an inhibitor. The **catalyst** is a platinum **catalyst**. The **matrix** further contains a inhibitor.

Preferred Detection Method: The **fluorophore** is tris(4,7-diphenyl-1,10-phenanthroline) ruthenium chloride pentahydrate/ruthenium (II) chloride hydrate **fluorophore** and optionally the second **fluorophore** is 1,1',3,3,3',3'-

hexamethylindodicarbocyanine iodide **dye**. The **chromophore indicator dye** is cresol red, and the **acid-base indicator dye** is bromomethylol blue.

L141 ANSWER 3 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
 AN 2003-755208 [71] WPIX
 CR 1999-370143 [31]; 2000-060831 [05]; 2001-280518 [29]; 2001-522464 [57]
 DNN N2003-605076 DNC C2003-207214
 TI **Sensor** plate, for detecting presence of microorganisms in clinical and non-clinical specimens, has microorganism immobilization **matrix** layer and **sensor** layer that can undergo detectable change due to presence of microorganisms.
 DC A89 B04 D13 D16 J04 S03
 IN HYMAN, J M; JEFFREY, S R; MARESCH, M J; MATSUMURA, P M; THORPE, T C
 PA (HYMA-I) HYMAN J M; (JEFF-I) JEFFREY S R; (MARE-I) MARESCH M J; (MATS-I) MATSUMURA P M; (THOR-I) THORPE T C
 CYC 1
 PI US 2003100104 A1 20030529 (200371)* 13 C12M001-34
 ADT US 2003100104 A1 Cont of US 1997-989560 19971212, Cont of US 1999-320386 19990527, US 2000-741402 20001218
 FDT US 2003100104 A1 Cont of US 5976827, Cont of US 6197577
 PRAI US 1997-989560 19971212; US 1999-320386 19990527;
 US 2000-741402 20001218
 IC ICM C12M001-34
 AB US2003100104 A UPAB: 20031105
 NOVELTY - A **sensor** plate comprising a container, an immobilization layer for immobilizing a sample to be tested for the presence or enumeration of microorganisms, and a **sensor** layer between the immobilization layer and a wall of the container, is new. A portion of the **sensor** layer can undergo a detectable change due to the presence of microorganisms immobilized on and/or in the immobilization layer.
 USE - For detecting the presence of microorganisms in clinical and non-clinical specimens.
 ADVANTAGE - The novel **sensor** plate provides an environment to culture microbial organism colonies from a liquid sample, and a means to facilitate microbial detection and quantification, either manually or with an instrument.
 Dwg.0/5
 FS CPI EPI
 FA AB; DCN
 MC CPI: A12-V03C2; A12-W11L; B04-C02A1; B04-C02C; B04-C02D; B04-C02E; B04-C03; B04-F10; B04-F11; B04-N02; B05-B02C; B05-C01; B05-C03; B05-C04; B05-C05; B05-C08; **B11-C07B3**; B12-K04A4; B12-K04E; D03-K03; D03-K04; D05-H04; J04-C04
 EPI: S03-E04D; S03-E14H
 TECH UPTX: 20031105
 TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Component: The immobilization layer further comprises growth components for facilitating growth of microorganisms. The container is a sealed container having a headspace above the immobilization layer. A **gas** permeable membrane is provided in a wall of the container. A removable **gas** impermeable seal is positioned adjacent the **gas** permeable membrane. The **sensor** layer comprises an **indicator** having a change detectable by imaging, **fluorescence** reflectance technology. The immobilization layer comprises an immobilized sample with microorganisms. Conditioning components are provided near to or within the immobilization layer for improving microorganism detection capabilities. Preferred Property: The **sensor** layer is capable of undergoing a localized change in the ultraviolet (UV), visible and/or infrared spectrum. It undergoes a detectable change in response to changes in **oxygen**, hydrogen, hydrogen sulfide, **carbon dioxide**, ammonia, organic acid, nitrogen dioxide, or pH. It

exhibits a change in **fluorescence** intensity or visible **color** over a pH of 5-11.

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Component: The conditioning components comprise lytic agents, lytic enzymes, surfactants and components to neutralize growth inhibitors.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Component: Adhesive layers are provided between the immobilization layer and the **sensor** layer, and the **sensor** layer and the container wall. The immobilization layer comprises a gelling agent that is a solid gel, a semi-solid gel, or a **powdered** gel. The gelling agents comprise gums, agars, agaroses, carageenans, bentonite, alginates, collagens, gelatins, fused silicates, water-soluble starches, polyacrylates, celluloses, cellulose derivatives, polyethylene glycols, polyethylene oxides, polyvinyl alcohols, dextrans, polyacrylamides, or polysaccharides. The **sensor** layer comprises silicone.

L141 ANSWER 4 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 2003-415337 [39] WPIX

DNN N2003-330868 DNC C2003-110007

TI **Fluorescence** assay for detecting microorganisms comprises using a transparent container molded from a cyclic olefin **copolymer**.

DC A92 B04 D16 S03

IN GENTLE, T M; SULLIVAN, T M; TICE, G; YEH, M

PA (BECT) BECTON DICKINSON & CO

CYC 1

PI US 6432665 B1 20020813 (200339)* 6 C12Q001-04

ADT US 6432665 B1 US 2000-497781 20000203

PRAI US 2000-497781 20000203

IC ICM C12Q001-04

ICS C12Q001-00; C12Q001-02; G01N033-53

AB US 6432665 B UPAB: 20030619

NOVELTY - Detecting microorganisms in a sample by adding it to a transparent container containing a growth medium, irradiating the container with an excitation light source for a **fluorescent sensor** (inside the container), and comparing the resulting **fluorescent** light intensity with a control, by using a container molded from a cyclic olefin **copolymer**, is new.

USE - The method can be used to detect a variety of microorganisms, especially mycobacteria.

ADVANTAGE - The container is sufficiently transparent to allow optical detection of **fluorescence** and visual detection of any turbidity in the growth medium, provides a long shelf life for the growth medium when sealed with a closure (the growth medium remains free of contamination after storage for at least a year at 40 deg. C), is heat-resistant to at least 250 deg. C, and can withstand internal pressures of about 25 psi.

DESCRIPTION OF DRAWING(S) - The drawing shows an exploded side elevational view of the container.

Dwg.1/2

FS CPI EPI

FA AB; GI; DCN

MC CPI: A04-G; A04-G06; A12-L02; A12-L04; A12-P01B; A12-W11L; B11-C07B3; B12-K04E; D05-H04

EPI: S03-E14H4

TECH UPTX: 20030619

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred **Sensor**: The **fluorescent sensor** is preferably a tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) salt, a tris-2,2'-bipyridyl ruthenium (II) salt or 9,10-diphenyl anthracene.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred **Copolymer**: The

cyclic olefin **copolymer** is preferably a **copolymer** of a cyclic olefin and ethylene or a **copolymer** of formula (I):

n, m = integers;

R1-R5 = H or 1-8C alkyl.

ABEX UPTX: 20030619

WIDER DISCLOSURE - Also disclosed is the container.

SPECIFIC COMPOUNDS - The **fluorescent sensor** is tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) chloride or tris-2,2'-bipyridyl ruthenium (II) chloride.

L141 ANSWER 5 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
 AN 2002-557754 [59] WPIX
 CR 2002-723124 [78]
 DNN N2002-441464 DNC C2002-158376
 TI Optical-chemical **sensor** for **fluorescent** resonance energy transfer analysis, useful for determining e.g. pH in biological fluids, with donor and acceptor in separate chemical phases.
 DC A89 B04 S03
 IN KLIMANT, I
 PA (HOFF) HOFFMANN LA ROCHE & CO AG F; (HOFF) ROCHE DIAGNOSTICS GMBH
 CYC 22
 PI WO 2002054076 A2 20020711 (200259)* GE 36 G01N033-58
 RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
 W: JP US
 AT 2000002161 A 20021015 (200277) G01N021-76
 AT 410601 B 20030415 (200329) G01N021-76
 EP 1346220 A2 20030924 (200363) GE G01N033-542
 R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
 JP 2004517321 W 20040610 (200438) 66 G01N021-64 <--
 ADT WO 2002054076 A2 WO 2001-EP15186 20011221; AT 2000002161 A AT 2000-2161 20001229; AT 410601 B AT 2000-2161 20001229; EP 1346220 A2 EP 2001-984880 20011221, WO 2001-EP15186 20011221; JP 2004517321 W WO 2001-EP15186 20011221, JP 2002-554723 20011221
 FDT AT 410601 B Previous Publ. AT 2000002161; EP 1346220 A2 Based on WO 2002054076; JP 2004517321 W Based on WO 2002054076
 PRAI AT 2000-2161 20001229
 IC ICM G01N021-64; G01N021-76; G01N033-542; G01N033-58
 ICS G01N021-78; G01N033-483; G01N033-84
 AB WO 200254076 A UPAB: 20040616
 NOVELTY - Optical-chemical **sensor** that operates on the FRET (**fluorescent** resonance energy transfer) principle includes an acceptor (A; **chromophore** or luminophore) and a donor (D; luminophore) able to react with an analyte (I) in a test sample. A and D are in separate chemical phases, where the D phase is impermeable to the sample medium, or those component of it that affect the luminescent properties of D.
 DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of quantitative and/or qualitative detection of (I), or a component of **gaseous** or liquid media, using the new **sensor**.
 USE - The **sensor** is used for determination of:
 (1) pH;
 (2) the concentration or activity of ions (specifically lithium, sodium, potassium, magnesium, calcium or chloride), and
 (3) in acidic or alkaline aqueous systems, components that are **gaseous** under normal conditions (**carbon dioxide** or ammonia), particularly in body fluids, specifically blood, plasma or serum.
 ADVANTAGE - The **sensor** is less subject to interference from components of the sample (e.g. **oxygen**, water and amines) than known reagents and does not require difficult chemical syntheses to ensure that A and shielded D are close enough together.
 Dwg.0/7

FS CPI EPI
FA AB; DCN

MC CPI: **A12-L04B**; B04-B04D; B04-C03B; B04-C03C; B05-A01A; B05-A01B;
B05-C07; B10-A09B; B10-A16; B10-B01A; B10-B01B; B10-B04; B10-C02;
B10-C04C; **B11-C07B3**; B12-K04; B12-K04E

EPI: S03-E03X; S03-E04D; S03-E14H; S03-E14H1; S03-E14H9

TECH UPTX: 20020916

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred **sensor**
: D and A are each in a **matrix** material, either mixed or in the
form of a thin **sensor** film, preferably applied to a transparent
substrate or light guide. An optically insulating layer, permeable to
analyte, may be placed between the **sensor** layer and the sample
being tested. Particularly the **sensor** layer is made of a thin,
porous material, with the **matrix** materials for A and D retained
in its pores; or the **matrix** for A forms a thin film and that for
D is homogeneously dispersed in it. Especially the D-containing phase is
formed from particles, and A is bound to the particle surface. For
analysis, the **sensor** may be operated as a transducer or
enzymatic **sensor**.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred materials: D have high
luminescent quantum yield and long decay time (over 100 nsec), e.g.
cationic organometallic complexes of rare earth or Group 8B metals with
e.g. porphyrins, bipyridines or phenanthrolines. A are standard
indicator dyes, responsive to pH or ions, particularly
of the triphenylmethane or azo types.

TECHNOLOGY FOCUS - **POLYMERS** - Suitable materials for the D phase
are non-plastisized polyacrylonitrile, or its derivatives; poly(vinyl
chloride) and poly(vinylidene chloride). Typical materials suitable for
the A phase are poly(vinyl chloride), polystyrene, polyurethane,
optionally containing up to 80% plasticizer.

ABEX UPTX: 20020916

EXAMPLE - A mixture of (i) polyacrylonitrile-poly(ethylene glycol)
monomethyl ether **copolymer** (400 mg) and (ii) the donor
dye ruthenium(II) tris-(4,7-diphenyl-1,10-phenanthroline)
(3-trimethylsilyl)-1-propane sulfonate (20 mg) was dissolved in
dimethylformamide (80 ml), then the solution treated slowly with water
(500 ml) and sodium chloride, then centrifuged. The resulting
nanoparticles were washed well with water. A mixture was prepared from the
pH-sensitive acceptor **dye** N9 (25 mg) and concentrated
sulfuric acid (8 drops), then added to water (100 ml) and pH adjusted to 7
with sodium hydroxide. This mixture was treated with the nanoparticles,
and after 5 min sodium carbonate (4.2 g) was added, followed after a
further 5 min by 5M sodium hydroxide (2 ml). After another 30 min, the pH
was adjusted to 3 (hydrochloric acid), the recovered particles washed, and
suspended in ethanol. The suspension was mixed with a solution of
polymer D4 (polyurethane with hydrophilic sequences) and the
mixture spread on to polyester film as a 20 micron thick layer. The phase
shift (ϕ) of the donor-acceptor pair was measured as a function of pH;
at pH 7.3 it was 49.3degreesC when saturated with air, and 51.3degreesC in
absence of **oxygen**.

L141 ANSWER 6 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 2002-050435 [07] WPIX

DNN N2002-037217 DNC C2002-014425

TI Analysis of **gaseous** constituent of samples, e.g. **carbon**
dioxide for TOC determination in water, involves transferring the
gas from a sample receiver via an adapter to an analysis vessel
fitted with a pressure equalizer.

DC A89 E19 J04 S03

IN MOELLER, K; NIENDIECK, F; RADMACHER, E; MOLLER, K

PA (MACH-N) MACHEREY NAGEL GMBH & CO HANDELSGES; (MOLL-I) MOLLER K; (NIEN-I)
NIENDIECK F; (RADM-I) RADMACHER E; (MACH-N) MACHEREY NAGEL GMBH & CO

CYC 27

PI EP 1146335 A2 20011017 (200207)* GE 8 G01N031-22 <--
 R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT
 RO SE SI TR
 DE 10018784 A1 20011031 (200207) G01N031-22 <--
 US 2001051378 A1 20011213 (200207) G01N031-22 <--
 DE 10018784 C2 20020221 (200213) G01N031-22 <--
 DE 20121901 U1 20030904 (200360) G01N021-78 <--
 US 6740294 B2 20040525 (200435)# G01N007-00

ADT EP 1146335 A2 EP 2001-108716 20010406; DE 10018784 A1 DE 2000-10018784
 20000415; US 2001051378 A1 US 2001-835117 20010416; DE 10018784 C2 DE
 2000-10018784 20000415; DE 20121901 U1 DE 2001-20121901 20010406,
 Application no. EP 2001-108716 20010406; US 6740294 B2 US 2001-835117
 20010416

PRAI DE 2000-10018784 20000415

IC ICM G01N007-00; G01N021-78; G01N031-22

ICS G01N021-00; G01N021-31; G01N027-00; G01N031-00; G01N033-00

AB EP 1146335 A UPAB: 20020130

NOVELTY - **Gaseous** constituents of a sample are analyzed by transferring the constituent from a sample receiver via an adapter into an analysis vessel containing an **indicator** reagent and connected to the external atmosphere in such a way as to equalize the pressure.

DETAILED DESCRIPTION - A method for the analysis of a **gaseous** or vaporizable constituent (23) of a sample (5), in which the sample (5) is filled into a sample receiver (2) through an inlet (4), an analysis vessel (7) containing an **indicator** reagent (8) is attached to inlet (4) via an adapter (10) and the constituent (23) is transferred from receiver (2) to vessel (7). In this system, vessel (7) is connected to the external atmosphere in such a way as to equalize the pressure. An INDEPENDENT CLAIM is also included for a test kit for such analysis, comprising the above components, in which the analysis vessel (7) can be used as sample container in an optical measuring instrument and is also fitted with a pressure-release device (13).

USE - For the analysis of **gaseous** or vaporizable constituents of a sample, especially e.g. for the determination of total organic carbon in water analysis.

ADVANTAGE - Enables the rapid, quantitative and low-cost analysis of **gaseous** or vaporisable constituents of samples using an **indicator** which gives an intense visible end-point. The test kit based on this method provides for the absorption of a **gaseous** analyte driven out of the sample within a closed system comprising two glass cuvettes, a **gas**-tight adapter and a pressure-equalisation device; this eliminates the possibility of error due to the ingress of air (affecting e.g. the determination of total organic carbon) and prevents adverse effects on **gas** exchange and end-point intensity due to the build-up of a counter-pressure.

DESCRIPTION OF DRAWING(S) - The drawing shows a combination of sample receiver and analysis vessel, connected by an adapter and placed in a heating block, with an enlarged sectional view of the adapter.

Heating block 1

Sample receiver 2

Threaded neck of vessel 3, 9

Water sample 5

Analysis vessel 7

Liquid **indicator** 8

Plastic adapter 10

Hydrophobic separating membrane 12

Analyte (e.g. **carbon dioxide**) 23

Carrier **gas** (e.g. **oxygen** and water vapor) 24

Dwg. 6/8

FS CPI EPI

FA AB; GI; DCN

MC CPI: A12-L04B; E11-Q03; E31-N05C; J04-C02; J04-C03

EPI: S03-E09E

TECH

UPTX: 20020130

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Method: The system is connected to the atmosphere (for pressure equalization) by piercing vessel (7) with a ventilation tube (21), but only after the adapter (10) is attached to (7). After filling with the sample, any constituents not required for analysis are removed by heating receiver (2), preferably after adding a suitable expulsion reagent to (2). Preferred Test Kit: The pressure-release device (13) is at the opposite end of vessel (7) from the inlet (4) and is only pervious to **gases**. Device (13) may be in the form of an opening (15, 14) in the vessel which is sealed with a semipermeable or perforable barrier (17 or 16 respectively). The pressure-release device incorporates a vent needle (21) which is used to pierce the barrier (16). The barrier (17, 18) has a removable or strippable protective element (20) on the outside, preferably consisting of a protective film attached with adhesive. The adapter (10) is fitted with a **gas**-permeable separating membrane (12), preferably consisting of hydrophobic material.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Materials:

Semi-permeable barriers (17) consist of hydrophobic material, especially in the form of membranes, e.g. of PTFE, PVDF or FEP **copolymer**. Perforable barriers (16) are also in the form of membranes, preferably made of rubber, especially butyl rubber, preferably **coated** with PTFE or FEP.

ABEX

UPTX: 20020130

EXAMPLE - A receiver (2) is filled with a water sample (5) containing an acid mixture (e.g. sodium hydrogen sulfate), heated in a thermo-block for 15 minutes at 70degreesC to drive off inorganic carbon and removed from the block. An oxidizing agent (e.g. perdisulfate) is then added and the receiver is attached to an analysis vessel (7) with a **gas**-tight adapter using the threaded necks on the vessels. The other end of the analysis vessel is sealed with a membrane which is impermeable to liquid but permeable to the carrier **gas** (**oxygen** and water vapor) formed by the oxidizing agent. This carrier **gas** assists the transfer of **carbon dioxide** from vessel (2) to vessel (7) in which the determination of total organic carbon is performed with the aid of a liquid **indicator**.

L141 ANSWER 7 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 2001-616075 [71] WPIX

DNC C2001-184337

TI Sample container assembly for use in optical detection system comprises container, and closure.

DC A17 A92 D16 E12 E13

IN GENTLE, T M; SULLIVAN, T M; TICE, G; YEH, M

PA (BECT) BECTON DICKINSON & CO

CYC 22

PI WO 2001057179 A1 20010809 (200171)* EN 24 C12M001-24

RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

W: JP

EP 1165746 A1 20020102 (200209) EN C12M001-24

R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

US 6432697 B1 20020813 (200255) C12M001-24

JP 2003521918 W 20030722 (200350) 22 C12M001-34

ADT WO 2001057179 A1 WO 2001-US3377 20010202; EP 1165746 A1 EP 2001-908788 20010202, WO 2001-US3377 20010202; US 6432697 B1 US 2000-496775 20000203; JP 2003521918 W JP 2001-557996 20010202, WO 2001-US3377 20010202

FDT EP 1165746 A1 Based on WO 2001057179; JP 2003521918 W Based on WO 2001057179

PRAI US 2000-496775 20000203

IC ICM C12M001-24; C12M001-34

AB WO 200157179 A UPAB: 20011203

NOVELTY - A sample container assembly comprising a container (10) having a sidewall, a bottom wall (16), an open top end (18), and a liquid sample and a closure (22) coupled to the open end of the container. The container is formed from a cyclic olefin **copolymer** having a transparency sufficient to visually observe turbidity in the sample.

DETAILED DESCRIPTION - A sample container assembly comprising a container having a sidewall, a bottom wall, an open top end, and a liquid sample; and a closure coupled to the open end of the container. The container is formed from a cyclic olefin **copolymer** having a transparency sufficient to visually observe turbidity in the sample. The sample is free of contamination after storage in the assembly for an extended period of time under ambient conditions.

USE - The assembly is used in an optical detection system, particularly for detecting the presence of microorganisms by **fluorescence** analysis.

ADVANTAGE - The assembly is non-breakable, optically clear to allow visual detection of a **fluorescent** compound by ultraviolet light and visual inspection of a microorganism growth medium. It is heat resistant, and can withstand an internal pressure of 25 psi without rupturing or distortion. It is also non-reactive with a liquid microorganism growth media.

DESCRIPTION OF DRAWING(S) - The figure shows an exploded side elevational view of the container.

Container 10

Bottom wall 16

Open top end 18

Closure 22

Dwg.1/2

FS CPI

FA AB; GI; DCN

MC CPI: A04-G01E; A12-L04; A12-W11L; D05-H04; E05-M

TECH UPTX: 20011203

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Device: The extended period of time is at least 1 year at 40 degreesC. The container has a wall thickness sufficient to withstand an internal pressure of at least 25 psi, and is able to withstand autoclaving at least 250 degreesF without increasing brittleness of the container. The device further comprises a **fluorescent sensor** compound fixed to an inner surface of the container that when exposed to **oxygen** exhibits a reduction in **fluorescent** intensity upon exposure to a **fluorescing** light.

TECHNOLOGY FOCUS - BIOLOGY - Preferred Component: The sample is a microorganism growth medium.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Components: The **fluorescent** compound is tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) salts, tris-2,2'-bipyridyl ruthenium (II) salts, and/or 9,10-diphenyl anthracene, particularly tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) chloride, or tris-2,2'-bipyridyl ruthenium (II) chloride hexahydrate.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Components: The cyclic olefin **copolymer** is a **copolymer** of a cyclic olefin and ethylene or a **copolymer** of formula (I).
R1, R5 = H, or 1-8C alkyl.

L141 ANSWER 8 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 2001-138389 [14] WPIX

DNN N2001-100688 DNC C2001-040874

TI A **colorimetric** device, used as part of an endotracheal intubation apparatus, comprises a silicone oligomer or **polymer**.

DC A26 A89 B04 E19 E36 J04 S03

IN ALBADRAN, J; MCMURRAY, N H
 PA (SENS-N) SENSORMETRIX INT LTD
 CYC 94

PI WO 2001004624 A1 20010118 (200114)* EN 17 G01N031-22 <--
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
 NL OA PT SD SE SL SZ TZ UG ZW
 W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM
 DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC
 LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE
 SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2000056921 A 20010130 (200127) G01N031-22 <--
 ADT WO 2001004624 A1 WO 2000-GB2431 20000706; AU 2000056921 A AU 2000-56921
 20000706

FDT AU 2000056921 A Based on WO 2001004624

PRAI GB 1999-16236 19990710

IC ICM G01N031-22

ICS G01N033-00

AB WO 200104624 A UPAB: 20010323

NOVELTY - A **colorimetric** device (I) which includes a silicone oligomer or **polymer**, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) detecting CO₂ comprising placing (I) in situ and observing **color** change;

(2) a medical device including (I);

(3) determining the proper placement of an endotracheal tube which comprises inserting (I) into the trachea of a patient and observing a **color** change;

(4) the use of an organic solvent soluble, substantially non-curable, hydrophobic silicone oligomer or **polymer** in the manufacture of (I); and

(5) a film formulation comprising at least 1 pH **sensitive dye** and an organic solvent soluble, substantially non-curable, hydrophobic silicone oligomer or **polymer**.

USE - (I) is used as a CO₂ indicator.

ADVANTAGE - (I) does not need to be hermetically sealed and the reaction on the film is reversible.

Dwg.0/0

FS CPI EPI

FA AB; DCN

MC CPI: A06-A00E3; **A12-L04B**; A12-V03D; B04-C03D; B05-C05; B11-C04;
 B11-C07B1; B11-C08C; B12-K04A; E10-A01; E10-A22G; E11-Q03L; E31-N05C;
 J04-B01

EPI: S03-E09E

TECH UPTX: 20010323

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Materials: The silicon oligomer or **polymer** is an organic solvent soluble, substantially non-curable, hydrophobic silicone oligomer or **polymer**. (I) comprises a pH **sensitive dye**. The silicone oligomer or **polymer** has an oxygen permeability of at most 150000 cm³/24 hours and a carbon dioxide permeability of at most 750000 cm³/24 hours. The silicone oligomers or **polymers** are substantially linear, are free of hydrophilic groups and have methyl substituents, ethyl or trifluoromethyl substituents. The silicone oligomers or **polymers** are linear **polydimethylsiloxanes** with a molecular weight of 200-200000. The silicone is optically transparent and substantially free of migrating low molecular weight materials. (I) includes a phase transport enhancer of the general formula R₂-X+(R₁)(R₃)-Y-(F₁):
 X = N-R₄, P-R₄ or S;
 R₁-R₃ = 1-18C-alkyl or aralkyl, or two of R₁-R₃ together complete an optionally substituted heterocyclic group containing up to 20C atoms;
 R₄ = 13-17C-alkyl;

Y = an anion selected from halide, carbonate and tetra fluoroborate

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Enhancer: The phase transport enhancer is a symmetrical 13-17C ammonium salt. The asymmetric 18C ammonium salt is tripentyl-octadecyl ammonium. The phase transport enhancer is a benzalkonium salt.

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Device: (I) is a CO₂ detector. The medical device comprising (I) is an endotracheal intubation apparatus.

L141 ANSWER 9 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 2000-441516 [38] WPIX

DNC C2000-134046

TI New apparatus for detecting microorganism growth using culture medium in a container, a chemically **sensitive** material, a first material exhibiting **fluorescence** decay and a second material exhibiting an optical transmission.

DC B04 D16

IN BERNDT, K W

PA (BECT) BECTON DICKINSON & CO

CYC 1

PI US 6080574 A 20000627 (200038)* 15 C12M001-34

ADT US 6080574 A Cont of US 1994-244228 19940510, CIP of US 1996-617966 19960311, US 1999-262520 19990304

PRAI US 1999-262520 19990304; US 1994-244228 19940510;

US 1996-617966 19960311

IC ICM C12M001-34

AB US 6080574 A UPAB: 20000811

NOVELTY - An apparatus for detecting microorganism growth comprises a chemically **sensitive** material, a first material exhibiting **fluorescence** decay and a second material exhibiting an optical transmission.

DETAILED DESCRIPTION - An apparatus (I) for detecting microorganism growth comprises:

(a) a container comprising a culture medium, a blood specimen and a headspace having a concentration of a **gas**;

(b) a chemically **sensitive** material in the container for detecting microorganism growth within the container when illuminated with an intensity modulated light comprising a first and second material, where the first material exhibits a **fluorescence** decay time and **fluorescence** intensity that depend on a first chemical parameter of the **gas** and the second material exhibits an optical transmission that depends on a second chemical parameter of the **gas**.

USE - The method and the apparatus is useful for identifying microorganisms in blood (claimed).

ADVANTAGE - The method and apparatus is useful for reliably and non-invasively detecting biological activities in blood culture vials that do not have the **fluorescence** intensity limitations.

DESCRIPTION OF DRAWING(S) - The diagram illustrates a composite optical blood culture **sensor**.

Container; 1

cap; 2

Sensor materials; 3

Culture medium; 4

Light Source; 5

Signal Source; 7

Computer. 12

Dwg.0/14

FS CPI

FA AB; DCN

MC CPI: B04-B04D5; B04-F09; B04-F10; B04-F11; B05-A03B; B05-C04; B05-C08;

B06-C; B06-D15; B10-A01; B10-A16; **B11-C07B3**; B12-K04A4;
D05-H02; D05-H04

TECH

UPTX: 20000811

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Apparatus: The first chemical parameter of the **gas** is **oxygen** concentration so that the first material exhibits a change in **fluorescence** decay time and **fluorescence** intensity in response to the change in **oxygen** concentration of the **gas**. The first material is a **fluorophore**. The second chemical parameter of the **gas** is **carbon dioxide** concentration so that the second material exhibits a change in optical transmission in response to the change in **carbon dioxide** concentration of the **gas**. The second material is a **chromophore**.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Apparatus: The **fluorophore** is tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) chloride and the second chemical parameter of the **gas** is **carbon dioxide** concentration so that the second material exhibits a change in optical transmission in response to the change in **carbon dioxide** concentration of the **gas**. The second material is a **chromophore** (especially bromocresol purple, m-cresol purple, nitrazine yellow, chlorophenol red or bromomethyl blue). The second material exhibits a change in optical transmission within the excitation wavelength range or within the emission wavelength range of the first material in response to the change in **carbon dioxide** concentration of the **gas**. The apparatus further comprises a light source for illuminating the chemically **sensitive** material in the container with excitation light that is intensity modulated at a predetermined circular modulation frequency with a predetermined modulation degree, a photodetector for detecting **fluorescence** light reemerging from the chemically **sensitive** material, a means for measuring an AC component and a DC component of the **fluorescence** photocurrent from the photodetector and a means for generating **sensor** output signal based on the AC component and the DC component representing information as to whether or not microorganism growth is present within the container. The apparatus also further comprises means for compiling a first set of signals corresponding to the **fluorescence** decay time and **fluorescence** intensity depending on the first chemical parameter of the **gas**, a means for compiling a second set of signals corresponding to the **fluorescence** decay time and **fluorescence** intensity depending on the second chemical parameter of the **gas** and a means for comparing the first and second sets of signals with corresponding predetermined data base of first and second sets of signals for known microorganisms to perform microorganism identification on a detected microorganism.

L141 ANSWER 10 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 2000-302286 [26] WPIX
DNN N2000-225817 DNC C2000-091553
TI New 3H-fluoren-3-ylidene derivatives e.g. useful for making biomedical **sensors** or electro-optic devices.
DC A14 B04 E14 E24 J04 L03 P81 S03 V07
IN GOETZ, F J
PA (GOET-I) GOETZ F J
CYC 1
PI US 6041157 A 20000321 (200026)* 33 G02B006-00
ADT US 6041157 A Provisional US 1996-32280P 19961203, US 1997-980446 19971128
PRAI US 1996-32280P 19961203; US 1997-980446 19971128
IC ICM G02B006-00
ICS G02B005-23
AB US 6041157 A UPAB: 20000531
NOVELTY - 3H-Fluoren-3-ylidene derivatives (I) are new.
DETAILED DESCRIPTION - 3H-Fluoren-3-ylidene derivatives of formula

(I) and their bipolar tautomers are new:

X = D or A;

D = J; D1=Z-; or D2=C- in which the C atom is part of an aromatic or heteroaromatic ring system optionally substituted by one or more J groups and/or one or more R1, R2, GR3, GQ, GT, GY, GR asterisk, Q, T, Y or R asterisk groups;

D1, D2 = substituted or unsubstituted unsaturated heterocyclic organic ring systems having one to (a-1) members being at least one electron donating heteroatom having one or two lone electron pairs being bonded to a carbon or to a heteroatom of the ring system and being J or L;

Z, Z1, Z2 = N, P, As, Sb or Bi, or C, Si or Ge optionally substituted by J, L, R1, R2, GR, Q, T, Y or R asterisk;

A = L;

L, L1 = CN, NO, NO2, COJ2, C(J2)=NJ3, P(O)J2J3, P(O)(J2)(NJ3J4), SO2J2, S(O)(NJ2)J3, S(NJ2)(NJ3)J4, SOJ2 or Z'=Z-J2; J = R, R1, R2, R3, (CH2)nR1, SR1, OR1, NR1R2, GR1, (CH2)nGR1, SGR1, OGR1, N(GR1)(GR2), OOR1, OOGRI, SSR1 or SSGRI;

J1-J4 = (CH2)nR1, SR1, OR1 or NR1R2;

L2 = =CA1A2 or =Z(A)Q(q-1);

L3, L4 = C(R)=CA1A2;

A1, A2 = L or together form a ring system optionally substituted by J, L, R1, R2, GR, Q, T, Y or R asterisk;

R = J, L, R1, R2, GR, Q, T, Y or R asterisk;

G = (CH=CH)x, (CH2)w, 6-16C arylene or 5- to 14-membered heteroarylene (containing N, P, O, S, Se or Te), all optionally substituted by J1 or L1;

x = 1-10;

w = 1-22;

R1, R2 = H, halogen, Q, T, Y, 1-22C alkyl, or 6-16C aryl or 5- to 14-membered heteroaryl (containing N, P, O, S, Se or Te) optionally substituted by J1 or L1;

R3 = H, halogen, Q, T, Y, 1-22C alkyl or 3-22C cycloalkyl;

R asterisk = a reactive group;

Q = A, D, an electron lone pair or T;

T = a **polymerizable** group

Y = a **polymerization**-initiating group

M, M1 = J, L, R1, R2, Q, T, Y, GR, GQ, GT, GR asterisk, GY or GR; or M+M forms a 6-46C carbocyclic or 2-32C heterocyclic ring system fused to positions 7 and 8; or M1+M1 forms a 6-46C carbocyclic or 2-32C heterocyclic ring system fused to positions 1 and 2;

R = a group of formula (I) minus M or M1;

m, n = 0-3.

An INDEPENDENT CLAIM is also included for concatenated analogs of formula (II)-(IV):

o, p = 1-1,000,000.

USE - (I) are substances that (a) undergo changes in their optical properties in response to environmental changes, (b) undergo permanent changes in refraction on exposure to radiation and (c) in some cases, possess strong luminescence, absorption and refraction in the near infrared. They can be fabricated into optical devices and circuits, e.g. biomedical **sensors** such as glucose **sensors**, by photoprocessing; can be used with implants for determining medical information, e.g. blood and tissue levels of glucose, electrolytes, heavy metals, **carbon dioxide**, **oxygen**, antibodies, acidity and/or alkalinity; and can be used to make electro-optic devices, e.g. optical integrated circuits, modulators, switches or transmitters.

Dwg.0/0

FS CPI EPI GMPI

FA AB; GI; DCN

MC CPI: A04-F11; B05-A02; B05-B01A; B05-B01B; B05-B01C; B05-B01E; B05-B01F; B05-B02C; B08-D03; E05-E01; E05-F02; E05-G02; E05-H; E05-J; E05-K; E08-D03; ~~E25-E03~~; J04-B01; L03-D01D

EPI: S03-E03C1; ~~S03-E04E~~; S03-E14H1; S03-E14H6; V07-K10B2

TECH

UPTX: 20000531

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - (I) can be prepared e.g. by reacting compounds of formula (V) with a strong acid in the presence of a dehydrating agent and reacting the resulting carbonium ion with -ZQq:

ABEX

UPTX: 20000531

SPECIFIC COMPOUNDS - None given.

DEFINITIONS - Full Definitions:

X = D or A;

D = J; D1=Z-; or D2=C- in which the C atom is part of an aromatic or heteroaromatic ring system optionally substituted by one or more J groups and/or one or more R1, R2, GR3, GQ, GT, GY, GRasterisk, Q, T, Y or Rasterisk groups;

D1, D2 = substituted or unsubstituted unsaturated heterocyclic organic ring systems having one to (a-1) members being at least one electron donating heteroatom having one or two lone electron pairs being bonded to a carbon or to a heteroatom of the ring system and being J or L;

Z, Z1, Z2 = N, P, As, Sb or Bi, or C, Si or Ge optionally substituted by J, L, R1, R2, GR, Q, T, Y or Rasterisk;

A = L;

L, L1 = CN, NO, NO2, COJ2, C(J2)=NJ3, P(O)J2J3, P(O

)(J2)(NJ3J4), SO2J2, S(O)(NJ2)J3, S(NJ2)(NJ3)J4, SOJ2 or

Z'=Z-J2; J = R, R1, R2, R3, (CH2)nR1, SR1, OR1, NR1R2, GR1, (CH2)nGR1,

SGR1, OGR1, N(GR1)(GR2), OOR1, OOGR1, SSR1 or SSGR1;

J1-J4 = (CH2)nR1, SR1, OR1 or NR1R2;

L2 = =CA1A2 or =Z(A)Q(q-1);

L3, L4 = C(R)=CA1A2;

A1, A2 = L or together form a ring system optionally substituted by J, L, R1, R2, GR, Q, T, Y or Rasterisk;

R = J, L, R1, R2, GR, Q, T, Y or Rasterisk;

G = (CH=CH)x, (CH2)w, 6-16C arylene or 5- to 14-membered heteroarylene (containing N, P, O, S, Se or Te), all optionally substituted by

J1 or L1;

x = 1-10;

w = 1-22;

R1, R2 = H, halogen, Q, T, Y, 1-22C alkyl, or 6-16C aryl or 5- to 14-membered heteroaryl (containing N, P, O, S, Se or Te)

optionally substituted by J1 or L1;

R3 = H, halogen, Q, T, Y, 1-22C alkyl or 3-22C cycloalkyl;

Rasterisk = a 1-2C carbonyl halide, 0-20C sulfonyl halide, 0-20C phosphoryl halide, 1-21C imidoyl halide, 1-31C alkyl halide, 1-31C alpha-haloester, 1-31C alpha-haloketone, 1-21C heterocyclyl halide or 2-32C cycloalkyl halide group or a reactive unsaturated group, e.g. an isocyanate, isothiocyanate, ketene, olefin, acetylene, allene, ketone, alpha,beta-dione, alpha,beta,gamma-trione, imine, alpha,beta-diimine, azide, carbodiimide, unsaturated ketone, ester, sulfone, sulfonamide or sulfonate group, a group comprising carbon double-bonded to a heteroatom, a 1-21C alcohol, 1-21C carboxylic acid, 0-20C sulfonic acid, 1-21C carboxamide, 0-20C sulfonamide, 1-30C amine, 6-36C aryl, 1-22C heteroaryl, 0-21C mercaptan or phosphate group, or an alkali metal, alkaline earth metal, transition metal or B-group metal;

Q = A, D, an electron lone pair or T;

T = a **polymerizable** 4-26C alpha,beta-unsaturated carbonyl, 3-25C vinyl ether, 2-23C carboxylic acid, 3-45C ester, 1-22C alcohol, 1-22C isocyanate, 1-22C isothiocyanate, 1-44C amine or 2-44C 1-substituted or 1,1-disubstituted alkylene group, or a **polymerizable** 1-44C group containing a 0-22C nucleophilically replaceable group, all optionally substituted by GY, GQ and GRasterisk;

Y = a **polymerization**-initiating group selected from 2-22C alpha,beta-diones, 1-21C azoalkanes, 1-21C alkyl peroxides, 0-20C hydroperoxides, 1-21C peroxide esters, 0-20C persulfonates, 0-20C alpha,beta-disulfones, 1-21C esters, 1-21C ethers, 1-21C alcohols, 1-41C amines, 0-20C sulfonic acids, 1-21C carboxamides, CHA1A2, 3-23C substituted cyclopropanes, 4-24C substituted cyclobutanes, 1-31C

substituted iodonium groups and 2-42C substituted sulfonium groups, the substituents being J, L, R1, R2, GR, GQ, GT, GRasterisk, Q, T or Rasterisk;

M, M1 = J, L, R1, R2, Q, T, Y, GR, GQ, GT, GRasterisk, GY or GR; or M+M forms a 6-46C carbocyclic or 2-32C heterocyclic ring system fused to positions 7 and 8; or M1+M1 forms a 6-46C carbocyclic or 2-32C heterocyclic ring system fused to positions 1 and 2;

R = a group of formula (I) minus M or M1;

m, n = 0-3.

L141 ANSWER 11 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 2000-064290 [06] WPIX

DNC C2000-018025

TI Homogeneous composition for detecting growth of **respiring** microorganisms in sample comprising tris(4,7-diphenyl-10-phenanthroline)ruthenium dichloride pentahydrate.

DC A26 A96 B04 D16 J04

IN GENTLE, T M; YEH, M

PA (BECT) BECTON DICKINSON & CO

CYC 28

PI EP 962535 A1 19991208 (200006)* EN 11 C12Q001-04
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT
RO SE SI

US 5998517 A 19991207 (200006) C08K005-34

JP 2000004898 A 20000111 (200013) 8 C12Q001-04

CA 2272043 A1 19991205 (200021) EN C12Q001-04

EP 962535 B1 20030827 (200358) EN C12Q001-04

R: DE FR GB IT

DE 69910667 E 20031002 (200372) C12Q001-04

ADT EP 962535 A1 EP 1999-109191 19990510; US 5998517 A US 1998-92689 19980605;
JP 2000004898 A JP 1999-160156 19990607; CA 2272043 A1 CA 1999-2272043
19990513; EP 962535 B1 EP 1999-109191 19990510; DE 69910667 E DE
1999-610667 19990510, EP 1999-109191 19990510

FDT DE 69910667 E Based on EP 962535

PRAI US 1998-92689 19980605

IC ICM C08K005-34; C12Q001-04

ICS C09B057-10; C12M001-34

AB EP 962535 A UPAB: 20000203

NOVELTY - Homogeneous composition for detecting growth of **respiring** microorganisms in a sample comprises:

(a) tris(4,7-diphenyl-10-phenanthroline)ruthenium dichloride pentahydrate (I) ;

(b) a hydroxy containing organic or silicone compound;

(c) an organosilicon **polymer**;

(d) an organohydrogensilicon compound;

(e) a **catalyst**; and

(f) a filler.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(1) composition for detecting growth of **respiring** microorganisms in a sample comprising (I) dissolved in a silicone **polymer** with a silanol functional group incorporated into a liquid silicone **polymer**;

(2) preparation of a composition for detecting growth of **respiring** microorganisms in a sample comprising:

(i) forming a solution of (I) and a hydroxyl-functional group;

(ii) adding an organosilicon **polymer**;

(iii) adding an organohydrogensilicon compound in the presence of a **catalyst**, forming an elastomer; and

(iv) adding filler.

USE - Detecting growth of **respiring** microorganisms in a sample (claimed) by changing **fluorescence** intensity according to **oxygen** concentration.

ADVANTAGE - The composition allows direct addition of (I) to a liquid

silicone **polymer** and does not require its deposition on a solid surface, so is homogeneous.

Dwg.0/0

FS CPI

FA AB; DCN

MC CPI: A06-A00A; A06-A00E; A08-R01; A10-D; A12-L04; A12-W11L; B04-C03B; B04-C03D; B05-A03B; B11-C09; B12-K04; D05-H04; D05-H05; D05-H06; J04-B01

TECH UPTX: 20000203

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Composition: The composition also comprises an acid to maintain the pH at 7.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred Composition: The hydroxy-containing compound is especially a silicone is of formula (I).
R = 1-12C hydrocarbon;
X = OH or R1;
n = 1 or 2;
m = a number to give a viscosity of 1-500 mPas at 25 degreesC;
R1 = 1-20C optionally substituted unsaturated aliphatic hydrocarbon.

ABEX UPTX: 20000203

EXAMPLE - Tris(4,7-diphenyl-10-phenanthroline)ruthenium dichloride pentahydrate was dissolved in Si2O5, then added to silicone to form a **sensor**. Performance of this **sensor** is given in a table in the specification, but the results are not explained.

L141 ANSWER 12 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 2000-038654 [03] WPIX

DNN N2000-029175 DNC C2000-009875

TI Measuring **carbon dioxide**, **oxygen**, etc. in water, carbonated beverage, sparkling wine, beer, blood, etc..

DC A14 A96 B04 D13 D15 D16 J04 S03

IN GOTTLIEB, A J

PA (GOTT-I) GOTTLIEB A J

CYC 20

PI WO 9956109 A1 19991104 (200003)* EN 29 G01N021-63
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: JP US

ADT WO 9956109 A1 WO 1999-US9168 19990427

PRAI US 1998-83179P 19980427

IC ICM G01N021-63

AB WO 9956109 A UPAB: 20000118

NOVELTY - A fluid mixture contacts and partly dissolves a **copolymer** exposed to light of preset wavelength characteristic. Measuring the light exiting from the particle **indicates** the presence of a selected chemical species in the mixture.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for an analytical apparatus. Preferred Features: Light from source (301) is directed along a waveguide (302), through the chamber (303) and along another waveguide (304) to a **sensor** (305). The chamber is optical fiber(s) made from the **copolymer** whose cladding has a lower refractive index than its core.

USE - For detecting **carbon dioxide**, **oxygen**, etc. in water, carbonated beverages, sparkling wine, beer, blood, etc.

ADVANTAGE - The detector is reliable and stable over long periods.

Dwg.3/10

FS CPI EPI

FA AB; GI; DCN

MC CPI: **A12-L04B**; A12-V03C2; B04-B04D5; B05-C04; B05-C08; B11-C08; B11-C09; B12-K04A; D03-K03; D05-H09; J04-B01A
EPI: S03-E04D; **S03-E04E**; S03-E09E; S03-E13B; S03-E14A; S03-E14B; S03-E14H1

TECH UPTX: 20000118

TECHNOLOGY FOCUS - **POLYMERS** - The copolymer is made from perfluoro (2,2-dimethyl 1,3-dioxole) and a perhalogenated monomer(s), preferably tetrafluoroethylene, chlorotrifluoroethylene or perfluoro(methylvinyl) ether. The composition of the optical fiber core may be at least 65 mole % and the cladding at least 90 mole % of the perfluoro compound.

L141 ANSWER 13 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
 AN 1999-469152 [39] WPIX
 DNN N1999-350299 DNC C1999-137680
 TI Optical **sensor** comprising detection layer that includes luminescent and reflective materials, for analysis of **gases** and ions in e.g. blood.
 DC A60 A89 B04 J04 S02 S03
 IN BARNARD, S M; COLLINS, T C; CUDMORE, S L; MASON, R W; MUNKHOLM, C; SLOVACEK, R E; SULLIVAN, K J
 PA (FARB) BAYER CORP; (BARN-I) BARNARD S M; (COLL-I) COLLINS T C; (CUDM-I) CUDMORE S L; (MASO-I) MASON R W; (MUNK-I) MUNKHOLM C; (SLOV-I) SLOVACEK R E; (SULL-I) SULLIVAN K J
 CYC 85
 PI WO 9937997 A1 19990729 (199939)* EN 48 G01N021-64 <--
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL
 OA PT SD SE SZ UG ZW
 W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD
 GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV
 MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT
 UA UG US UZ VN YU ZW
 AU 9917779 A 19990809 (200001) G01N021-64 <--
 EP 1051607 A1 20001115 (200059) EN G01N021-64 <--
 R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
 US 6254831 B1 20010703 (200140) G01N021-64 <--
 US 2001012539 A1 20010809 (200147) B05D005-12
 JP 2002501191 W 20020115 (200207) 49 G01N021-64 <--
 ADT WO 9937997 A1 WO 1999-IB47 19990118; AU 9917779 A AU 1999-17779 19990118;
 EP 1051607 A1 EP 1999-900082 19990118; WO 1999-IB47 19990118; US 6254831
 B1 US 1998-9917 19980121; US 2001012539 A1 Div ex US 1998-9917 19980121,
 US 2001-823734 20010330; JP 2002501191 W WO 1999-IB47 19990118, JP
 2000-528856 19990118
 FDT AU 9917779 A Based on WO 9937997; EP 1051607 A1 Based on WO 9937997; US
 2001012539 A1 Div ex US 6254831; JP 2002501191 W Based on WO 9937997
 PRAI US 1998-9917 19980121; US 2001-823734 20010330
 IC ICM B05D005-12; G01N021-64
 ICS G01N021-76
 AB WO 9937997 A UPAB: 19990928
 NOVELTY - Optical **sensor** (A) comprises a support and a detection layer (DL) comprising:
 (i) a luminescent material (I) for which the luminescent intensity depends on the amount of an analyte present;
 (ii) material (II) that reflects very efficiently the wavelengths of excitation of, and emission from, (I); and
 (iii) a **polymeric** binder (III).
 DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for producing (A).
 USE - The optical **sensors** are used to determine **gases** (particularly **oxygen**, **carbon dioxide** and ammonia) or (non)ionic analytes (e.g. physiologically important metal ions, charged forms of lactate, creatinine and urea) in highly scattering samples, particularly blood.
 ADVANTAGE - (II) overcomes optical interference associated with absorption, scattering and reflection of excited and/or emitted light, i.e. it acts as an internal light barrier and particularly increases the emission signal by reflecting excitation light, that would otherwise be transmitted back into (I). It eliminates the need for additional

coating layers.

Dwg.0/11

FS

CPI EPI

FA

AB; DCN

MC

CPI: A12-L04; B04-B04D5; B04-C02A; B04-C03B; B04-C03D; B05-A01B; B05-A02;
B05-A03A; B05-A03B; B05-C01; B05-C04; B05-C08; B06-D18; B11-C07B2;
B11-C07B4; B12-K04A; B12-K04E; J04-C04

EPI: S02-K02D; S03-E04D; S03-E14H1

TECH

UPTX: 19990928

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred **sensor**

: DL is 0.2-10 (especially 1-8) microm thick and contains 5-65 (particularly 30-50) wt.% (II), particularly a pigment (inorganic and/or a bluish **polymer** pigment). The (I) content is 0.01-3 wt.%. DL is the outermost layer, in contact with analyte-containing sample, and the support is transparent to wavelengths of excitation and emission, particularly a flexible plastic film but it may also be a glass microscope slide. (A) may have two or more DL in a pattern, capable of measuring different analytes. Optionally DL also includes an agent that increases permeability and improves mechanical integrity and stability. Specifically mentioned (A) are used to detect (1) **oxygen**, with (I) as platinum octaethylporphyrin and (III) as a hydrophobic **copolymer** of ethylhexyl- and methyl methacrylates; (2) **carbon dioxide**, with (II) as an acridine, **fluorescein**, rhodamine or pyrene and (III) as ethyl cellulose; or (3) pH, with (I) as in (2) and (III) as a **copolymer** of N,N-dimethylacrylamide and N-tert-butylacrylamide.

Preferred analytes: The analytes are (i) a **gas**, particularly ammonia, **carbon dioxide** or **oxygen** or (ii) an ionic or nonionic material.

Preparation: The support is **coated** with a liquid mixture which is then allowed to dry to form DL. Preferably DL is heated to above the glass-transition temperature of (III), then cooled to ambient conditions.

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - The pigments comprise one or more of titanium, zinc, antimony or magnesium oxides, and/or barium sulfate, most preferably titanium dioxide of particle size 0.1-0.5 microm.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - (II) is an acridine, **fluorescein**, rhodamine or pyrene, or a phosphorescent material, particularly platinum octaethylporphyrin.

TECHNOLOGY FOCUS - **POLYMERS** - (III) is a polyamide, polyacrylamide, polystyrene, poly(alkyl)acrylate, polynitrile, poly(vinyl chloride or alcohol), polydiene, polyester, polycarbonate, **polysiloxane**, polyurethane, polyolefin, polyimide or their **heteropolymer** combinations, or cellulose and their derivatives. Most preferred are ethyl cellulose; a **copolymer** of N,N-dimethylacrylamide and N-tert-butylacrylamide, or, where (II) is phosphorescent, a **copolymer** of ethylhexyl- and methyl-methacrylates.

ABEX

UPTX: 19990928

EXAMPLE - A mixture of ethylhexyl- and methyl-methacrylate (1:9) **copolymer** (1 g), titanium dioxide (1 g), tetrahydrofuran (10 ml) and ten tungsten carbide beads was milled overnight, then 6 mg platinum octaethylporphyrin added to 3 ml of the mix and stirred vigorously. The mixtures was applied to films of 'Mylar' (RTM for polyester) to a thickness, after drying, of 8 microm. The films were heated at 105degreesC for 1 hour, in a vacuum oven, then cooled to room temperature overnight. When these films were used in an **oxygen sensor**, the plot of luminescent intensity ratio vs. **oxygen** partial pressure was linear over the partial pressure range 40-180 mm for both clear liquid calibrator samples and tonometered blood samples, with points from both sample types on a single line. This shows that the presence of variable

amounts of hemoglobin in the sample did not affect the results. For similar **sensors** lacking titanium dioxide, the plots for blood samples were significantly different from those for calibrators, with the degree of difference depending on the hemoglobin content.

L141 ANSWER 14 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
 AN 1999-370143 [31] WPIX
 CR 2000-060831 [05]; 2001-280518 [29]; 2001-522464 [57]; 2003-755208 [71]
 DNC C1999-109219
 TI **Sensor** device useful for detecting microorganisms.
 DC A89 A96 B04 D16 J04
 IN HYMAN, J M; JEFFREY, S R; MARESCH, M J; MATSUMURA, P M; THORPE, T C
 PA (INMR) BIOMERIEUX INC; (ALKU) AKZO NOBEL NV
 CYC 24
 PI US 5912115 A 19990615 (199931)* 20 C12Q001-00
 WO 9929831 A1 19990617 (199931) EN C12M003-00
 RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
 W: AU CA FI JP KR US
 AU 9917241 A 19990628 (199946) C12M003-00
 WO 2000003035 A1 20000120 (200012) EN
 RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
 W: CA FI JP KR US
 EP 1003836 A1 20000531 (200031) EN C12M003-00
 R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
 EP 1097240 A1 20010509 (200128) EN C12Q001-00
 R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
 KR 2000071045 A 20001125 (200131) C12M003-00
 JP 2002520028 W 20020709 (200259) 40 C12Q001-24
 AU 752954 B 20021003 (200301) C12M003-00
 ADT US 5912115 A CIP of US 1997-989560 19971212, US 1998-113929 19980710; WO 9929831 A1 WO 1998-US26376 19981210; AU 9917241 A AU 1999-17241 19981210; WO 2000003035 A1 WO 1999-US15599 19990712; EP 1003836 A1 EP 1998-962077 19981210, WO 1998-US26376 19981210; EP 1097240 A1 EP 1999-933857 19990712, WO 1999-US15599 19990712; KR 2000071045 A WO 1998-US26376 19981210, KR 1999-707313 19990812; JP 2002520028 W WO 1999-US15599 19990712, JP 2000-559255 19990712; AU 752954 B AU 1999-17241 19981210
 FDT AU 9917241 A Based on WO 9929831; EP 1003836 A1 Based on WO 9929831; EP 1097240 A1 Based on WO 2000003035; KR 2000071045 A Based on WO 9929831; JP 2002520028 W Based on WO 2000003035; AU 752954 B Previous Publ. AU 9917241, Based on WO 9929831
 PRAI US 1998-113929 19980710; US 1997-989560 19971212
 IC ICM C12M003-00; C12Q001-00; C12Q001-24
 ICS C12M001-00; C12Q001-02; C12Q001-04
 AB US 5912115 A UPAB: 20031105
 NOVELTY - **Sensor** device (I) for detecting the presence and enumerating microorganisms in a blood sample, is new.
 DETAILED DESCRIPTION - (I) comprises a container under vacuum and a test-sample immobilization layer within the container.
 INDEPENDENT CLAIMS are also included for the following:
 (i) a kit for collecting a blood sample from a patient comprising a needle connected to a direct draw conduit with a piercing mechanism, and a container comprising a microorganism immobilization layer and a **sensor** layer, held under vacuum and with a pierceable wall section; and
 (ii) a method of taking a blood sample from a patient and detecting microorganisms in the sample using the kit of (i).
 USE - The device is useful for detecting and enumerating microbial activity in a blood sample.
 ADVANTAGE - Blood flows directly from the patient into the evacuated device where detection of the microorganisms takes place. Blood may be collected using a standard hospital adapter.
 DESCRIPTION OF DRAWING(S) - The diagram shows an illustration of the **sensor** plate device.

Sensor plate 1

Port 2

Stopper 3

Dwg.1/1

FS CPI

FA AB; GI; DCN

MC CPI: **A12-L04B**; A12-V03C2; B04-B04D5; B04-C03; B05-A03; B05-C08;
 B06-A02; B06-A03; B06-C; B10-C03; B11-C07B1; **B11-C07B3**;
 B11-C08C; B11-C09; B12-K04A4; D05-H09; J04-B01; J04-C04

TECH UPTX: 19990806

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred **Sensor** Layer: The **sensor** layer undergoes detectable localized changes in response to the presence of microorganism colonies. The layer is opaque and blocks the viewing of the test sample (either by eye or with a detector) from the side of the layer opposite the immobilization layer. The opaque layer changes **color** and/or undergoes a localized change in the ultraviolet, visible, and/or infra red spectrum in the presence of microorganisms. The localized change is detectable through the wall of the container. The **sensor** layer changes in response to changes in a **gas** component due to microorganism metabolism, **oxygen**, hydrogen, hydrogen sulfide, **carbon dioxide**, organic acid, nitrogen dioxide, ammonia, and/or pH. The **sensor** layer optionally comprises an **indicator** that has a change detectable by imaging, **fluorescence** or reflectance and exhibits a change in **fluorescence** intensity or visible **color** over a pH range of 5-11. The layer contains **fluorescein**, coumarin, phenolphthalein, thymolphthalein, bromothymol blue, thymol blue, xylenol blue, ortho cresolphthalein and/or alpha-naphthol benzein. The layer comprises a pigment, preferably a metal oxide pigment and especially titanium oxide, zinc oxide, magnesium oxide or iron oxide.

Preferred Immobilization Layer: The immobilization layer is an absorbent material, preferably filter paper, a sponge, glass fiber or cellulose and further comprises a gelling agent, preferably a solid gel (optionally dehydrated), a semi-solid gel (optionally dehydrated), or a **powdered** gel. The gelling agent is a gum, agar, agarose, carageenan, bentonite, alginate, collagens, gelatin, fused silicate, water soluble starch, polyacrylate, cellulose, cellulose derivative, polyethylene glycol, polyethylene oxide, polyvinyl alcohol, dextran, polyacrylamide, and/or polysaccharide. The immobilization layer preferably comprises an upper layer that traps microorganisms and a lower layer that acts as a wick and draws the liquid sample through the upper layer. The layer contains growth components, facilitating the growth of microorganisms. The layer optionally comprises lytic agents, lytic enzymes, surfactants and/or components to neutralize growth inhibitors. The lytic agent is preferably saponin, digitonin, Tween (RTM), or polysorbitan monolaurate and the growth inhibitor neutralizing factor is resin, ecosorb, and/or activated charcoal.

TECHNOLOGY FOCUS - **POLYMERS** - Preferred **Sensor** Layer:

The **sensor** layer optionally comprises a **polymeric** material and is preferably silicone.

Preferred Immobilization Layer: The immobilization layer comprises an absorbent material, preferably filter paper, sponge, glass fiber or cellulose and further comprises a gelling agent, preferably a solid gel (optionally dehydrated), a semi-solid gel (optionally dehydrated), or a **powdered** gel. The gelling agent is a gum, agar, agarose, carageenan, bentonite, alginate, collagens, gelatin, fused silicate, water soluble starch, polyacrylate, cellulose, cellulose derivative, polyethylene glycol, polyethylene oxide, polyvinyl alcohol, dextran, polyacrylamide, and/or polysaccharide.

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Device: (I) preferably further comprises a **sensor** layer that undergoes a detectable change in the presence of microorganisms on/in the

immobilization layer, and has a pierceable wall section for piercing during the direct draw of blood from a patient. One or both layers of the device are opaque and/or have **matrixes** that adversely affect the visualization of microorganism colonies. The device preferably further comprises an adhesive layer between the immobilization and **sensor** layers or the **sensor** layer and the container wall. The device optionally contains a conditioning layer next to in within the immobilization layer that comprises lytic agents, lytic enzymes, surfactants and/or components to neutralize growth inhibitors. The container is preferably flat, a holding device open at one end, a closed box of rectangular cross section or a bottle and is held at 0-12 psi. The container of the kit has a headspace above the immobilization layer, a **gas** permeable membrane in the wall of the container and a **gas** impermeable seal next to the **gas** impermeable membrane. The wall of the container is transparent or translucent. Preferred Method: The blood sample is opaque and microorganism colonies in the sample can not be easily seen with the naked eye. The sample has electromagnetic properties and is preferably **fluorescent** and the **sensor** layer undergoes localized changes in these properties in response to the presence or growth of microorganisms. The sample is optionally **colored** and/or **fluorescent** and the **sensor** layer comprises a **fluorescent** of visible pH **indicator**. The immobilization layer is a **powdered** gel and the blood sample is a liquid. The liquid blood sample mixes with the **powdered** gel and adheres to the **sensor** layer.

L141 ANSWER 15 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1999-216643 [19] WPIX

DNN N1999-159622 DNC C1999-063935

TI Optode **sensor** membrane for **gas** analyzer.

DC E36 H06 J04 Q73 S02 S03 W05 X22

IN ADOLPH, D; HENSEL, A; PFEFFERSEDER, A

PA (BOSC) BOSCH GMBH ROBERT

CYC 27

PI EP 903573 A2 19990324 (199919)* GE 11 G01N021-77 <--
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT
RO SE SI

DE 19741335 C1 19990610 (199927) G01N021-59

JP 11153545 A 19990608 (199933) 8 G01N021-77 <--

US 6230545 B1 20010515 (200129) G01N033-84

ADT EP 903573 A2 EP 1998-116154 19980827; DE 19741335 C1 DE 1997-1041335
19970919; JP 11153545 A JP 1998-266817 19980921; US 6230545 B1 US
1998-141295 19980828

PRAI DE 1997-19741335 19970919

IC ICM G01N021-59; G01N021-77; G01N033-84

ICS B01D071-06; F23N005-00; G01N021-17; G01N021-41; G01N021-78;

G01N031-00; G01N031-22

AB EP 903573 A UPAB: 20011203

NOVELTY - Optode **sensor** membrane for determining the physical and/or chemical parameters of a sample contains an **indicator** substance (I) that changes the absorption properties of the **sensor** membrane for electromagnetic radiation and/or its optical refractive index when in at least indirect contact with a **gas** (mixture).

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the apparatus used.

USE - Used in the determination of **gases** in **gas** mixtures, especially for testing exhaust **gases** from internal combustion engines, more especially vehicle exhaust **gases**, and using the results to control the engine; for monitoring indoor air quality and especially using the results to control ventilation and air conditioning; for monitoring and controlling hydrocarbon-fueled combustion plant and fires; in smoke alarms; and as ammonia alarm, especially in cold rooms with refrigerators containing ammonia (all claimed).

ADVANTAGE - The detectors can be miniaturized very easily, as only very small amounts of substance are needed for detection. Concentrations from a few parts per billion (ppb) to a few percent can be determined without cross-sensitivity, which normally requires much more expensive equipment. It is also easy to produce the required detection limit by varying the thickness and composition of the membrane.

DESCRIPTION OF DRAWING(S) - The drawing shows the absorption maximum versus ammonia concentration in ppm. Curve B shows the background signal with pure air.

Dwg.5/6

FS CPI EPI GMPI

FA AB; GI; DCN

MC CPI: E11-Q03; E31-D02; E31-H04; E31-H05; E31-N05B; E31-N05C; E32-A02;

H06-C04; J04-C04

EPI: S02-J01A; S03-E04B1A; S03-E04B5; S03-E04C1; ~~S03-E04E~~;

S03-E09E; S03-E14N; S03-E14P; W05-B02A1; X22-A05B

TECH UPTX: 19990510

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Indicators:

(I) includes sub-group I-II and V-VIII transition metal complexes.

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred

Indicator: (I) is **gas**-specific and especially responds

to not less than 2 **gases**. Especially suitable **indicators**

are (a) an ion pair, especially from a cationic or anionic **dye** molecules and counter ion); and (b) a substance undergoing a reversible chemical or physical change in contact with the **gas** to be determined, especially (b1) an azobenzene, acetophenone, corrine, porphyrin, phthalocyanin, macrolide, porphyrinogen, nonactine, valinomycin and/or sub-group I-II and V-VIII transition metal complexes; and (b2) a substance showing a reversible change in a (local) absorption maximum, which especially is different for each **gas**. Preferred Membrane: The membrane is based on a chemically inert **polymer**.

It may contain a plasticizer, a **gas**-specific **catalyst**

and/or a phase transfer **catalyst**. Apparatus: The apparatus has **gas**-permeable membrane(s) of the specified type. It preferably also has electromagnetic radiation detector(s), especially a photodiode; and electromagnetic radiation source(s), especially a light-emitting diode (LED) emitting a discrete selectable wavelength. The membrane is placed between the source and detector, optionally on a support transmitting selected wavelengths, especially on the detector and/or source. This array is placed in a chamber with inlet(s) and outlet(s) for the **gas** mixture. The detectors is provided with an analyzer. The membrane may be placed on an interferometer, especially a wave guide.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Indicators: (I)

are selected from (a) an ion pair, especially from a cationic or anionic **dye** molecules and counter ion); and (b) a substance undergoing a reversible chemical or physical change in contact with the **gas** to be determined, especially (b1) an azobenzene, acetophenone, corrine, porphyrin, phthalocyanin, macrolide, porphyrinogen, nonactine, valinomycin and/or sub-group I-II and V-VIII transition metal complexes.

TECHNOLOGY FOCUS - POLYMERS - Preferred Membrane: The membrane

is based on a chemically inert **polymer**. It may contain a plasticizer, a **gas**-specific **catalyst** and/or a phase transfer **catalyst**.

ABEX UPTX: 19990510

EXAMPLE - 115 mg N,N'-dibenzyl-N,N'-diphenyl-1,2-

(phenylenedioxydiacetamide) (ligand), 15.2 mg 3',3'',5',5''-tetrabromo-

phenolphthalein ethyl ester, potassium salt (**indicator**), 80 mg bis(2-ethylhexyl)sebacate (plasticizer) and 40 mg polyvinyl chloride were dissolved in 1.2-2 ml tetrahydrofuran. The mixture was applied to a glass slide or other suitable support and dried, giving a homogeneous, transparent gel film (1-4 mm thick). A 3 mm thick membrane was contacted

with air containing varying amounts of ammonia. The height of the absorption maximum at 620 nm correlated accurately with the ammonia concentration (in ppm).

L141 ANSWER 16 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
 AN 1998-521390 [44] WPIX
 CR 1998-286663 [25]; 2002-470558 [50]; 2003-246670 [24]; 2003-255220 [25];
 2003-810750 [76]
 DNN N1998-407153 DNC C1998-156688
 TI Detecting concentration of chemical species - uses **sensor** device
 comprising crystalline colloidal array **polymerised** in hydrogel
 that changes volume in response to species.
 DC A14 A89 B04 D16 E36 J04 S03
 IN ASHER, S A; HOLTZ, J H
 PA (UYPI-N) UNIV PITTSBURGH; (ASHE-I) ASHER S A
 CYC 82
 PI WO 9841859 A1 19980924 (199844)* EN 36 G01N033-00
 RW: AT BE CH DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA
 PT SD SE SZ UG ZW
 W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE
 GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG
 MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG
 UZ VN YU ZW
 AU 9866935 A 19981012 (199907)
 US 5854078 A 19981229 (199908) G01N033-00
 EP 986750 A1 20000322 (200019) EN
 R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
 US 6187599 B1 20010213 (200111) G01N033-545
 MX 9908498 A1 20000201 (200123) G01N033-00
 US 2001026946 A1 20011004 (200161) G01N033-545
 JP 2001517307 W 20011002 (200172) 36 G01N033-00
 JP 3342498 B2 20021111 (200280) 15 G01N033-00
 ADT WO 9841859 A1 WO 1998-US4566 19980309; AU 9866935 A AU 1998-66935
 19980309; US 5854078 A CIP of US 1996-743816 19961106, US 1997-819240
 19970317; EP 986750 A1 EP 1998-909054 19980309, WO 1998-US4566 19980309;
 US 6187599 B1 CIP of US 1996-743816 19961106, Cont of US 1997-819240
 19970317, US 1998-111610 19980707; MX 9908498 A1 MX 1999-8498 19990915; US
 2001026946 A1 CIP of US 1996-743816 19961106, Cont of US 1997-819240
 19970317, Cont of US 1998-111610 19980707, US 2001-753592 20010103; JP
 2001517307 W JP 1998-540570 19980309, WO 1998-US4566 19980309; JP 3342498
 B2 JP 1998-540570 19980309, WO 1998-US4566 19980309
 FDT AU 9866935 A Based on WO 9841859; EP 986750 A1 Based on WO 9841859; US
 6187599 B1 Cont of US 5854078, CIP of US 5898004; US 2001026946 A1 Cont of
 US 5854078, CIP of US 5898004, Cont of US 6187599; JP 2001517307 W Based
 on WO 9841859; JP 3342498 B2 Previous Publ. JP 200117307, Based on WO
 9841859
 PRAI US 1997-819240 19970317; US 1996-743816 19961106;
 US 1998-111610 19980707; US 2001-753592 20010103
 IC ICM G01N033-00; G01N033-545
 ICS C12Q001-68; G01J003-18; **G01N021-78**; G01N033-48; G01N033-50;
 G01N033-66
 AB WO 9841859 A UPAB: 20031125
 Detecting the concentration of a **gas** in a solution, comprises:
 (a) preparing a **sensor** device comprising a crystalline colloidal
 array (CCA) **polymerised** in a hydrogel (that undergoes a volume
 change in response to the **gas**), where the CCA has a lattice
 spacing that changes when the volume of the hydrogel changes, thus causing
 the diffracted wavelength (DW) of the CCA to change; (b) measuring the DW
 of the CCA **polymerised** in the hydrogel; (c) contacting the
polymerised CCA with the solution; (d) measuring the DW of the CCA
 following exposure to the solution; and (e) comparing the change in DW
 measurements to determine the concentration of the **gas**.
 USE- The invention relates to a process as described above, in which

the hydrogel undergoes a volume change in response to a specific chemical species (e.g. a **gas**). The device may be used in environmental, chemical or chemo-mechanical systems or in medical diagnostic tools. It may be used, e.g., as a **sensor** for lead, as an implant that can be placed directly under the skin, or to determine the concentration of analytes present in fluids (such as tear fluid).

ADVANTAGE- The **sensor** device is specific in that it is modified to react with only one species or family of species.

Dwg.0/9

FS CPI EPI

FA AB; DCN

MC CPI: **A12-L04B**; A12-V03C2; D05-H09; J04-C04

EPI: S03-E14; S03-E14H

L141 ANSWER 17 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1998-217281 [19] WPIX

CR 1992-351419 [43]; 2002-597712 [64]; 2003-447312 [42]

DNC C1998-068971

TI Detection of **respiring** microorganisms in a fluid - using **fluorescent** compound with reduced **fluorescence** upon exposure to **oxygen** in container in which the fluid is isolated from the atmosphere.

DC A89 B04 D16 E22 E23

IN BEATY, S; BURRELL, G J; FOLEY, T G; HU, J K Y; MONTHONY, J F; SAPITOWICZ, R; STITT, D T; HU, J K

PA (**BECT**) **BECTON DICKINSON & CO**; (**BECT**)

BECTON DICKINSON CO

CYC 76

PI WO 9812348 A1 19980326 (199819)* EN 41 C12Q001-04

RW: AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT
SD SE SZ UG ZW

W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE
HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX
NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN

AU 9744839 A 19980414 (199839)

EP 1021557 A1 20000726 (200037) EN

R: DE FR GB IT

JP 2002501363 W 20020115 (200207) 42 C12Q001-04

ADT WO 9812348 A1 WO 1997-US16496 19970918; AU 9744839 A AU 1997-44839
19970918; EP 1021557 A1 EP 1997-943349 19970918, WO 1997-US16496 19970918;
JP 2002501363 W WO 1997-US16496 19970918, JP 1998-514841 19970918

FDT AU 9744839 A Based on WO 9812348; EP 1021557 A1 Based on WO 9812348; JP
2002501363 W Based on WO 9812348

PRAI US 1996-715557 19960918

IC ICM C12Q001-04

ICS C12Q001-18; **G01N021-77**

AB WO 9812348 A UPAB: 20030703

Detection of the presence of **respiring** microorganisms in a fluid comprises: (a) placing the fluid in a container in which the fluid is isolated from atmospheric **oxygen** and placing within the container, but not in direct contact with the fluid, a **sensor** composition which comprises a **fluorescent** compound that exhibits a reduction in **fluorescent** intensity when irradiated with light containing wavelengths which cause the compound to **fluoresce**, upon exposure to **oxygen**, where the presence of the **sensor** composition is non-destructive to the microorganism; (b) irradiating the **sensor** composition with light containing wavelengths which cause the **fluorescent** compound to **fluoresce**; (c) measuring or visually observing the **fluorescent** light intensity from the **fluorescent** compound while irradiating the **sensor** compound with the light; (d) comparing the measurement to that of a control not containing **respiring** microorganism, where the control is selected from a

reagent control not in contact with **respiring** microorganisms and a calculated threshold, where change in **fluorescent** intensity relative to the **fluorescent** intensity of the control is **indicative** of the presence of **respiring** microorganisms; (e) in the event that no such increase is measured or observed, repeat steps (b), (c) and (d) as needed, to detect the presence of **respiring** microorganisms in the fluid.

The **fluorescent** compound may be e.g. tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) chloride (Ru(DPP)3Cl2), tris-2,2'-bipyridyl ruthenium (II) salt, or 9,10-diphenyl anthracene. The **fluorescent** compound may be contained in a **matrix**, preferably a silicone rubber **matrix**.

USE - The methods can be used for the measurement and/or detection of **respiring** microorganisms. They can also be used to test the susceptibility of a microorganism to a compound, such as an antibiotic, which is capable of severely inhibiting the growth and/or the metabolic activity of organisms (all claimed).

ADVANTAGE - The methods provide a system which can be simply read and visually interpreted, and which permits results to be obtained in a shorter time period than previously attainable, nominally 6 hours or less. The measurement of **fluorescence** is non-destructive and if after a period of time (e.g. 4 hours) the results are non-conclusive, the system can be re-incubated and read again at a later time.

Dwg.0/6

FS CPI

FA AB; DCN

MC CPI: **A12-L04B**; A12-V03C2; A12-W11L; B04-F01; **B11-C07B3**
; B12-K04; D05-H04; D05-H05; E24-A03

L141 ANSWER 18 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1997-549320 [50] WPIX

DNN N1997-458093 DNC C1997-175102

TI Reporter bead for flow-cytometric **fluorescent** measurement of analyte concentration - comprises reporter molecules immobilised on or in substrate.

DC A97 B04 C07 D15 D16 J04 S03

IN VAN DEN ENGH, G; WEIGL, B H

PA (UNIW) UNIV WASHINGTON

CYC 21

PI WO 9735189 A1 19970925 (199750)* EN 40 G01N031-22 <--
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: AU CA JP

AU 9740001 A 19971010 (199806) G01N031-22 <--
US 5747349 A 19980505 (199825) G01N033-00

ADT WO 9735189 A1 WO 1997-US4099 19970314; AU 9740001 A AU 1997-40001 19970314; US 5747349 A US 1996-621170 19960320

FDT AU 9740001 A Based on WO 9735189

PRAI US 1996-621170 19960320

REP EP 345782; EP 475045; EP 519198; US 4269516; US 5288642; WO 9207245

IC ICM **G01N031-22**; G01N033-00

ICS G01N021-01; **G01N021-64**

AB WO 9735189 A UPAB: 19980119

Reporter bead comprises a substrate bead and first type of reporter molecule immobilised on or in the bead. The **fluorescence** property of the molecules is a function of the concentration of the analyte in the bulk fluid. The **fluorescence** from a signal bead is sufficient for detection by flow cytometry. Also claimed are: (1) a reporter bead cartridge (A) for coupling with the fluid inlet of a flow cytometer and comprising the reporter beads; (2) a disposable flow module with a flow cytometer optical head which comprises a flow channel, a flow inlet port coupled to a first end of the flow channel, a cartridge (A) coupled to the fluid inlet port and a fluid outlet port coupled to a second end of the flow channel and (C) a method of measuring the

concentration of an analyte in the fluid bulk of a sample fluid which comprises mixing the reporter beads with sample fluid, flowing the sample fluid through the measurement zone of a flow cytometer, optically exciting the reporter molecules, measuring the **fluorescence** of the reporter molecules and obtaining the concentration of the analyte from the **fluorescence**.

The bead preferably comprises glass, latex, hydrogel, polystyrene, liposome or **polymer**. Reporter molecule is pH, **oxygen**, **carbon dioxide**, chloride, albumin, halide or sodium, potassium or calcium ion.

USE - The bead is used for flow cytometric **fluorescent** measurement of the concentration of analyte over an analytic range in a bulk fluid. The bead can also be used for measuring the cell content of biological samples.

ADVANTAGE - Several fluid bulk analytes may be measured simultaneously using microscale volumes. Dilution of the sample fluid is minimised and accurate measurement of the sample volume is not required. The number of beads added need not be precisely determined and the measurement does not require incubation, washing or filtering steps. Reporter molecules are immobilised on substrate beads so that incompatibilities between different types of reporter molecules are removed. Beads tagged with different reporter molecules can be mixed in one sample.

Dwg.1/5

FS CPI EPI

FA AB; GI; DCN

MC CPI: **A12-L04B**; B04-B04D2; B04-C03; B04-D02; B05-A01A; B05-A01B; B05-C04; B05-C07; B05-C08; **B11-C07B3**; B11-C09; B12-K04A; B04-B04D2; C04-B04D2; B04-C03; C04-C03; B04-D02; C04-D02; B05-A01A; C05-A01A; B05-A01B; C05-A01B; B05-C04; C05-C04; B05-C07; C05-C07; B05-C08; C05-C08; **B11-C07B3**; **C11-C07B3**; B11-C09; C11-C09; B12-K04A; C12-K04A; C04-B04D2; C04-C03; C04-D02; C05-A01A; C05-A01B; C05-C04; C05-C07; C05-C08; **C11-C07B3**; C11-C09; C12-K04A; D04-A; D05-H09; J04-B01A
EPI: S03-E04D; S03-E04H; S03-E09E; S03-E14H1; S03-F05C; S03-F06C

L141 ANSWER 19 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1997-300828 [28] WPIX

DNN N1997-248594 DNC C1997-097557

TI Imprinted material permitting selective association of relatively small species - is useful in chemical separation, biochemical separation, assays, **sensing** and immunoassays.

DC A89 B04 D16 E11 E12 J04 S03

IN BYFIELD, M P

PA (MAON) GEC-MARCONI LTD

CYC 20

PI GB 2308369 A 19970625 (199728)* 34 B01D053-00

WO 9722410 A1 19970626 (199731) EN 37 B01J020-32

RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE

W: JP US

EP 956156 A1 19991117 (199953) EN B01J020-32

R: CH DE ES FR GB IT LI NL SE

GB 2308369 B 20000517 (200026) B01D053-00

ADT GB 2308369 A GB 1996-2009 19960131; WO 9722410 A1 WO 1996-GB3136 19961218;

EP 956156 A1 EP 1996-942489 19961218, WO 1996-GB3136 19961218; GB 2308369

B GB 1996-2009 19960131

FDT EP 956156 A1 Based on WO 9722410

PRAI GB 1995-26109 19951220

REP 2.Jnl.Ref; DE 4338732; EP 619141; SE 8404967; US 5110833; US 5587273; WO 9213447; WO 9521673

IC ICM B01D053-00; B01J020-32

AB GB 2308369 A UPAB: 19970723

Imprinted material (IM) which permits selective association of relatively

small species (RSS) (preferably of molecular weight at most 150) with IM is new. Also claimed are: (1) preparation of IM which includes the use of a selected species and a companion species; (2) a **sensor** which includes IM; and (3) a test-kit which includes IM.

USE - IM is useful in chemical separation, biochemical separation, assays (both quantitative and qualitative), **sensing** (e.g. chemical **sensing**) and immunoassays.

Dwg.0/2

FS CPI EPI

FA AB; DCN

MC CPI: A12-L04; A12-V03C2; B05-A03; B05-C01; B05-C03; B05-C04; B05-C05; B05-C08; B06-D18; B12-K04E; D05-H09; E05-G; E05-L; E05-M; E05-N; E10-A15; E10-B04; E10-F02; E10-G02; E10-H01; E10-J01; E10-J02B; E11-Q01; E11-Q03; E31-A; E31-D; E31-F; E31-H; E31-N05; E32-A; E35; J04-B01; J04-C04
EPI: S03-E01C; S03-E02; S03-E04D; ~~S03-E04E~~; S03-E08C; S03-E14H4

L141 ANSWER 20 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1997-280643 [25] WPIX

DNN N1997-232584 DNC C1997-090117

TI Fibre optic **sensor** to measure analyte in fluid at remote location - has **sensing** layer, containing **indicator**, laminated to adhesive layer bonded at distal end of fibre, used to measure pH, blood **gases**, etc..

DC A96 B04 E19 J04 S02 S03 V07

IN FOWLER, W; JOHNSON, D K; KALLA, J; LYNCH, L; SEIFERT, K R

PA (OPTI-N) OPTICAL SENSORS INC

CYC 20

PI WO 9709609 A1 19970313 (199725)* EN 47 G01N021-64 <--
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: CA JP

US 5656241 A 19970812 (199738) 14 G01N021-64 <--

EP 848813 A1 19980624 (199829) EN G01N021-64 <--

R: DE ES FR GB IT NL

US 5900215 A 19990504 (199925) G01N021-64 <--

JP 2000501499 W 20000208 (200018) 39 G01N021-75

CA 2231113 C 20020423 (200231) EN G01N021-00

ADT WO 9709609 A1 WO 1996-US13762 19960827; US 5656241 A US 1995-524592 19950907; EP 848813 A1 EP 1996-929752 19960827; WO 1996-US13762 19960827; US 5900215 A Div ex US 1995-524592 19950907, US 1997-855939 19970514; JP 2000501499 W WO 1996-US13762 19960827, JP 1997-511255 19960827; CA 2231113 C CA 1996-2231113 19960827, WO 1996-US13762 19960827

FDT EP 848813 A1 Based on WO 9709609; US 5900215 A Div ex US 5656241; JP 2000501499 W Based on WO 9709609; CA 2231113 C Based on WO 9709609

PRAI US 1995-524592 19950907; US 1997-855939 19970514

REP US 4954318; US 5120510; US 5152287; US 5326531

IC ICM G01N021-00; ~~G01N021-64~~; G01N021-75

ICS G01N021-80

AB WO 9709609 A UPAB: 19970619

Fibre optic **sensor** for detecting or measuring a parameter of interest in a sample fluid comprises: (a) an elongated optical fibre means, having a distal end adapted to contact a sample fluid and a proximal end for receiving the signal from the distal end and relaying to a means of detection; (b) an adhesive layer bonded to the distal end, and (c) a **sensing** layer containing an **indicator sensitive** to a parameter of interest in the sample fluid and providing a signal related response, laminated to the adhesive layer.

USE - The system is designed to detect and measure analyte at a remote location and can be used in scientific research, medicine and industry, e.g. for the detection and measurement of biological fluids, particularly blood, especially of pH or **oxygen** or **carbon dioxide** concentration (pO2 or pCO2), glucose, potassium, calcium and magnesium ions. The apparatus can be sterilised if

desired.

ADVANTAGE - The **sensor** is simple to assemble by dip coating and amenable to mass production. The curing of adhesive on the fibre surface can be left incomplete to provide better bonding for the next layer, either of adhesive or **indicator**. The **sensor** has improved **sensitivity** and/or reliability compared to previous designs and materials leachable and/or unstable to hydrolysis and difficulties of even deposit on the surface, are avoided. The use of multilayers of adhesive, or moulding or forming the adhesive, may provide additional surface area for the **indicator**, in turn enhancing the response signal.

Dwg.0/5

FS CPI EPI

FA AB; DCN

MC CPI: A12-L03A; **A12-L04B**; A12-V03C2; B04-B04D5; B04-C03B; B04-C03D; B05-A01A; B05-A01B; B05-C04; B05-C08; B06-A03; B10-A07; B11-C07B2; B12-K04; E10-A07; E11-Q03; E31-D02; E31-N05C; E33-F; E34-B04; E34-D03; J04-B01; J04-C04

EPI: S02-K08A; S03-E03X; S03-E04D; S03-E14H; V07-N

ABEQ US 5656241 A UPAB: 19970922

A method of making a fiber optic **sensor** for detecting or measuring a parameter of interest in a sample fluid, comprising:

(a) providing an elongated optical fiber means having a distal tip and a proximal section for receiving a signal from the distal tip and relaying the signal to a detection means, wherein the surface of the optical fiber means is exposed at the distal tip;

(b) applying an adhesive composition over the exposed surface at the distal tip of the optical fiber means to provide an adhesive layer thereon capable of being formed into a desired configuration, wherein the adhesive composition is selected to harden and bond to a substrate upon curing with a **cross-linking** agent, or with light, or both;

(c) optionally forming the adhesive layer into a desired configuration;

(d) curing the adhesive layer to a predetermined degree;

(e) applying an **indicator** composition over the adhesive layer to form a **sensing** layer thereon, wherein the **indicator** composition contains an **indicator** component which is **sensitive** to a parameter of interest in the sample fluid and provides a signal related thereto; and

(f) optionally curing the **sensing** layer.

Dwg.0/5

L141 ANSWER 21 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1996-200283 [20] WPIX

CR 1995-089276 [12]

DNN N1996-168117 DNC C1996-063241

TI Measuring analyte by changing the **fluorescence** of **fluorophore** - by incorporating **fluorophore** and quat. onium cpd. in low dielectric medium, measuring **fluorescence**, exposing to analyte, measuring **fluorescence** change and determining concentration of analyte.

DC B04 D16 J04 S03

IN MUNKHOLM, C

PA (CIBA) CIBA CORNING DIAGNOSTICS CORP

CYC 1

PI US 5506148 A 19960409 (199620)* 20 G01N033-00

ADT US 5506148 A Div ex US 1993-116436 19930903, US 1994-214340 19940316

PRAI US 1993-116436 19930903; US 1994-214340 19940316

IC ICM G01N033-00

AB US 5506148 A UPAB: 19960520

Measuring an analyte which changes the **fluorescence** of a **fluorophore**, where the analyte can permeate through a low dielectric medium comprises: (a) incorporating a **fluorophore** and

quat. onium cpd. in a low dielectric medium, the **fluorophore** being a polyanionic **fluorescent dye** which undergoes a complete loss of **fluorescence** when solubilised in a low dielectric medium, the **fluorescence** being restored by the presence of the quat. onium cpd.; (b) measuring the **fluorescence**; (c) exposing the medium to a solution containing the analyte to be measured; (d) measuring the **fluorescence** change due to the analyte; and (e) determining the concentration of the analyte by reference to a calibration curve. Also claimed is an optical **sensing** device for determining the concentration of an analyte comprising a polyanionic **fluorophore** and quat. onium cpd. in a low dielectric **polymer** membrane on the surface of an optical component which is transparent to incident and emissive electromagnetic waves, optically connected to means for collecting the radiant emission to measure the **fluorescence indicative** of the concentration of the analyte.

USE - The method may be used for measuring an analyte and is useful in **sensor** devices.

Dwg.0/8

FS CPI EPI

FA AB; DCN

MC CPI: B05-C01; B05-C04; B05-C08; B06-A01; B06-A03; B11-C07B3;
B12-K04; D05-H09; J04-C02

EPI: S03-E14

L141 ANSWER 22 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1995-393055 [50] WPIX

CR 1995-393166 [50]

DNN N1995-286566 DNC C1995-169340

TI **Polymerisable** compsn. for mfg. **sensor** membranes -
comprising chemically bonded **indicator dye** and having
controlled deg. of hydrophilicity.

DC A18 A89 E24 G02 J04 P73 S03

IN BARNARD, S; ROUILLY, M; ALDER, A; BARNARD, S M; BERGER, J; BLOM, N

PA (CIBA) CIBA GEIGY AG; (NOVS) NOVARTIS AG; (NOVS) NOVARTIS-ERFINDUNGEN
VERWALTUNGS GMBH; (NOVS) NOVARTIS-ERFINDUNGEN VERW GES MBH

CYC 65

PI WO 9529959 A1 19951109 (199550)* EN 26 C09D004-06
RW: AT BE CH DE DK ES FR GB GR IE IT KE LU MC MW NL OA PT SD SE SZ UG
W: AM AU BB BG BR BY CA CN CZ EE FI GE HU IS JP KG KP KR KZ LK LR LT
LV MD MG MN MX NO NZ PL RO RU SG SI SK TJ TM TT UA US UZ VN

AU 9522223 A 19951129 (199609) C09D004-06

FI 9604334 A 19961101 (199707) C09D000-00

CZ 9603186 A3 19970212 (199713) C09D004-06

EP 758361 A1 19970219 (199713) EN C09D004-06

R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

SK 9601417 A3 19970507 (199731) C09D004-06

HU 75507 T 19970528 (199805) C09D004-06

JP 10504047 W 19980414 (199825) 31 C08F291-00

KR 97702905 A 19970610 (199825) C09D004-06

EP 881241 A2 19981202 (199901) EN C08F220-54

R: CH DE FR GB IT LI

US 5852126 A 19981222 (199907) C08F214-18

MX 9605326 A1 19980201 (199954) C09D004-06

EP 758361 B1 20001115 (200059) EN C08F291-00

R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

DE 69519427 E 20001221 (200106) C08F291-00

CN 1147267 A 19970409 (200108) C09D004-06

CN 1147301 A 19970409 (200108) G01N031-22 <--

JP 3476196 B2 20031210 (200382) 11 C08F291-00

ADT WO 9529959 A1 WO 1995-IB301 19950427; AU 9522223 A AU 1995-22223 19950427;
FI 9604334 A WO 1995-IB301 19950427, FI 1996-4334 19961028; CZ 9603186 A3
CZ 1996-3186 19950427; EP 758361 A1 EP 1995-915287 19950427, WO 1995-IB301
19950427; SK 9601417 A3 WO 1995-IB301 19950427, SK 1996-1417 19950427; HU

75507 T WO 1995-IB301 19950427, HU 1996-3034 19950427; JP 10504047 W JP 1995-528098 19950427, WO 1995-IB301 19950427; KR 97702905 A WO 1995-IB301 19950427, KR 1996-706157 19961101; EP 881241 A2 Div ex EP 1995-915288 19950427, EP 1998-113043 19950427; US 5852126 A WO 1995-IB301 19950427, US 1996-737029 19961030; MX 9605326 A1 MX 1996-5326 19961101; EP 758361 B1 EP 1995-915287 19950427, WO 1995-IB301 19950427; DE 69519427 E DE 1995-619427 19950427, EP 1995-915287 19950427, WO 1995-IB301 19950427; CN 1147267 A CN 1995-192883 19950427; CN 1147301 A CN 1995-192833 19950427; JP 3476196 B2 JP 1995-528098 19950427, WO 1995-IB301 19950427

FDT AU 9522223 A Based on WO 9529959; EP 758361 A1 Based on WO 9529959; HU 75507 T Based on WO 9529959; JP 10504047 W Based on WO 9529959; KR 97702905 A Based on WO 9529959; EP 881241 A2 Div ex EP 758451; US 5852126 A Based on WO 9529959; EP 758361 B1 Based on WO 9529959; DE 69519427 E Based on EP 758361, Based on WO 9529959; JP 3476196 B2 Previous Publ. JP 10504047, Based on WO 9529959

PRAI CH 1995-1068 19950411; CH 1994-1360 19940502

IC ICM C08F214-18; C08F220-54; C08F291-00; C09D000-00; C09D004-06; G01N031-22

ICS B32B017-10; B32B027-32; C07D311-80; C08F216-06; C08F216-12; C08F220-00; C08F220-58; C08F226-10; C09B069-10; C09D004-00

AB WO 9529959 A UPAB: 20031223

A **polymerisable** compsn. comprises: (a) at least one olefinic monomer (A); (b) at least one **polymer** of at least one olefinic monomer; (c) an **indicator dye** with an olefinic **polymerisable** gp. covalently bonded to its basic structure, either directly or via a bridge gp.; (d) at least one diolefinic **crosslinking** agent; and (e) an effective amount of a **polymerisation** initiator.

Also claimed are: (1) a carrier that has a layer of the above compsn. applied to at least one surface; (2) a carrier that has a **polymer** layer derived from the above compsn. applied to at least one surface; (3) an optical **sensor** that has a **polymer** layer derived from the above compsn. applied to at least one surface; (4) the use of **sensor** (3) for the optical determination of ions or **gases**; and (5) a **polymer** derived from the above compsn., pref. in the form of an unsupported film.

USE - The compsn. is used to make membranes suitable for optical **sensors** for the determination of ions or **gas** (claimed), e.g. O₂ CO₂, optionally on a carrier.

ADVANTAGE - The membranes have excellent mechanical strength. The **dye indicator** cannot be washed out as it is bonded covalently to the **polymer** spine, which provides a long usable life. The compsn. is storage stable and membranes are optically transparent because they are homogenous. The deg. of hydrophilicity can be controlled, especially allowing optical pH detection over a selected measuring range. The compsn. has a viscosity low enough to permit spin-casting as a **coating** on a carrier material. Ecologically favourable mfg. process can be used, including using aqueous **coating** solns. and carrying out **polymerisation** directly on the carrier. Layer thickness is reproducible, even with very thin layers, eliminating the need for re-calibration when a **sensor** is replaced.

Dwg.0/0

FS CPI EPI GMPI

FA AB; DCN

MC CPI: A08-C01; A09-A; A12-L04B; E11-Q03L; E31-D02; E31-N05C;

G02-A05; J04-C04

EPI: S03-E09E

L141 ANSWER 23 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1995-302810 [39] WPIX

DNN N1995-229883 DNC C1995-135570

TI Stabilised bio-inert **sensor** for **oxygen** or **carbon di oxide** concentration determ. in liquid medium

- comprises chemical **indicator sensitive** to analyte and stabilising substrate which is **crosslinked**, solid, silicone carbinol rubber **polymer**.

DC A26 A96 B04 E24 P31 S03

IN JOVANOVIC, M V; MARKLE, D R

PA (BIOM-N) BIOMEDICAL SENSORS LTD; (DIAM-N) DIAMETRICS MEDICAL LTD

CYC 24

PI WO 9522759 A1 19950824 (199539)* EN 22 G01N031-22 <--

RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

W: AU CA DE JP KR MX

AU 9513909 A 19950904 (199549) G01N031-22 <--

US 5511547 A 19960430 (199623) 8 A61B005-00

DE 29580807 U1 19961024 (199648) 25 G01N031-22 <--

ZA 9501219 A 19961030 (199649) 21 A61B000-00

EP 745220 A1 19961204 (199702) EN G01N031-22 <--

R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE

JP 09502528 W 19970311 (199720) 23 G01N031-22 <--

KR 97701348 A 19970317 (199813) G01N031-22 <--

MX 9603433 A1 19970301 (199820) G01N031-22 <--

JP 2821026 B2 19981105 (199849) 10 A61B005-14

EP 745220 B1 20000412 (200023) EN G01N031-22 <--

R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE

DE 69516272 E 20000518 (200031) G01N031-22 <--

KR 171549 B1 19990501 (200051) G01N031-22 <--

ADT WO 9522759 A1 WO 1995-IB36 19950118; AU 9513909 A AU 1995-13909 19950118;

US 5511547 A US 1994-197423 19940216; DE 29580807 U1 DE 1995-2080807

19950118, WO 1995-IB36 19950118; ZA 9501219 A ZA 1995-1219 19950215; EP

745220 A1 EP 1995-905214 19950118, WO 1995-IB36 19950118; JP 09502528 W JP

1995-521687 19950118, WO 1995-IB36 19950118; KR 97701348 A WO 1995-IB36

19950118, KR 1996-704438 19960814; MX 9603433 A1 MX 1996-3433 19960815; JP

2821026 B2 JP 1995-521687 19950118, WO 1995-IB36 19950118; EP 745220 B1 EP

1995-905214 19950118, WO 1995-IB36 19950118; DE 69516272 E DE 1995-616272

19950118, EP 1995-905214 19950118, WO 1995-IB36 19950118; KR 171549 B1 WO

1995-IB36 19950118, KR 1996-704438 19960814

FDT AU 9513909 A Based on WO 9522759; DE 29580807 U1 Based on WO 9522759; EP

745220 A1 Based on WO 9522759; JP 09502528 W Based on WO 9522759; KR

97701348 A Based on WO 9522759; JP 2821026 B2 Previous Publ. JP 09502528,

Based on WO 9522759; EP 745220 B1 Based on WO 9522759; DE 69516272 E Based

on EP 745220, Based on WO 9522759

PRAI US 1994-197423 19940216

REP EP 448052; US 413114; US 4712865; US 5275645; WO 9105252

IC ICM A61B000-00; A61B005-14; G01N031-22

ICS C01B000-00; C07B000-00; C08G018-61; C08G077-04; C08G077-16;

C08G077-38; C08G077-388; C08L083-06; G01N021-77;

G01N031-00; G01N033-533

ICA A61B005-00

AB WO 9522759 A UPAB: 19970909

Stabilised bio-inert **sensor** for determining an analyte in a medium, comprises a chemical **indicator sensitive** to the analyte in association with a stabilising substrate. The substrate is formed from a **polymer** which is inert to the medium and analyte, and which does not affect the **sensitivity** of the **indicator**. The **polymer** is a **crosslinked**, solid, silicone rubber formed from a silicone carbinol with a molecular structure compatible with the **indicator**.

USE - Solid state **sensors** especially for determining concentration of **gases**, partic. partial pressures of O2 and CO2 and of pH. Useful for liquid media especially human blood.

ADVANTAGE - Stable bio-inert **sensor** in which **indicator** is not leached or washed away. **Sensor** has short response time and good **sensitivity**.

Dwg.0/0

FS CPI EPI GMPI

FA AB; DCN
 MC CPI: A06-A00E3; A06-A00E4; **A12-L04B**; A12-V03C2; B04-B04D5;
 B04-C03D; B05-A03B; B05-C04; B05-C08; B06-C; B06-D05; B10-A22;
B11-C07B3; B12-K04A; E05-M; E10-A01; E11-Q03L; E31-D02;
 E31-N05C
 EPI: **S03-E04E**; S03-E09E
 ABEQ US 5511547 A UPAB: 19960610
 A stabilized, bio-inert **sensor** for the determination of an
 analyte in a medium which comprises a chemical **indicator**
sensitive to the analyte in association with a stabilizing
 substrate formed from a **polymer** which is inert to the medium and
 analyte and does not affect the **sensitivity** of the
indicator, which **polymer** is a **crosslinked**,
 solid silicone rubber formed from a silicone carbinol having a molecular
 structure compatible with said **indicator**.
 Dwg.0/0

L141 ANSWER 24 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1995-089276 [12] WPIX

CR 1996-200283 [20]

DNC C1995-040539

TI Activating the **fluorescence** of **dyes** in low dielectric
 media - by addition of quat. onium cpd..

DC A89 B04 E24 J04

IN MUNKHOLM, C; MUNKHOLM, C S

PA (CIBA) CIBA CORNING DIAGNOSTICS CORP; (FARB) BAYER CORP

CYC 60

PI US 5387525 A 19950207 (199512)* 20 G01N033-00
 WO 9506871 A2 19950309 (199515) EN 53 G01N021-64 <--
 RW: AT BE CH DE DK ES FR GB GR IE IT KE LU MC MW NL OA PT SD SE
 W: AM AT AU BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU JP KG KP
 KR KZ LK LR LT LU LV MD MG MN MW NL NO NZ PL PT RO RU SD SE SI SK
 TJ TT UA US UZ VN
 AU 9473910 A 19950322 (199527) G01N021-64 <--
 WO 9506871 A3 19950427 (199615) G01N033-00
 EP 716740 A1 19960619 (199629) EN G01N021-64 <--
 R: AT BE CH DE DK ES FR GB IT LI
 EP 716740 B1 19970205 (199711) EN 30 G01N021-64 <--
 R: AT BE CH DE DK ES FR GB IT LI
 JP 09500685 W 19970121 (199713) 54 C09K011-06
 DE 69401717 E 19970320 (199717) G01N021-64 <--
 ES 2099626 T3 19970516 (199727) G01N021-64 <--
 AU 687854 B 19980305 (199820) G01N021-64 <--
 MX 186618 B 19971023 (199901) G01N033-000
 JP 2866201 B2 19990308 (199915) 21 C09K011-06
 KR 171534 B1 19990501 (200051) G01N021-04
 CA 2170592 C 20001121 (200065) EN C09K011-06

ADT US 5387525 A US 1993-116436 19930903; WO 9506871 A2 WO 1994-IB260
 19940830; AU 9473910 A AU 1994-73910 19940830; WO 9506871 A3 WO 1994-IB260
 19940830; EP 716740 A1 EP 1994-923826 19940830, WO 1994-IB260 19940830; EP
 716740 B1 EP 1994-923826 19940830, WO 1994-IB260 19940830; JP 09500685 W
 WO 1994-IB260 19940830, JP 1995-508027 19940830; DE 69401717 E DE
 1994-601717 19940830, EP 1994-923826 19940830, WO 1994-IB260 19940830; ES
 2099626 T3 EP 1994-923826 19940830; AU 687854 B AU 1994-73910 19940830; MX
 186618 B MX 1994-6729 19940902; JP 2866201 B2 WO 1994-IB260 19940830, JP
 1995-508027 19940830; KR 171534 B1 WO 1994-IB260 19940830, KR 1996-701077
 19960302; CA 2170592 C CA 1994-2170592 19940830, WO 1994-IB260 19940830
 FDT AU 9473910 A Based on WO 9506871; EP 716740 A1 Based on WO 9506871; EP
 716740 B1 Based on WO 9506871; JP 09500685 W Based on WO 9506871; DE
 69401717 E Based on EP 716740, Based on WO 9506871; ES 2099626 T3 Based on
 EP 716740; AU 687854 B Previous Publ. AU 9473910, Based on WO 9506871; JP
 2866201 B2 Previous Publ. JP 09500685, Based on WO 9506871; CA 2170592 C
 Based on WO 9506871

PRAI US 1993-116436 19930903
REP 5.Jnl.Ref; US 5034189; US 5047627; WO 9105252; WO 9304368
IC ICM C09K011-06; G01N021-04; **G01N021-64**; G01N033-00; G01N033-000
ICS C09B067-42; **G01N021-77**; **G01N021-78**;
G01N031-00
AB US 5387525 A UPAB: 20001214
Activating the **fluorescence** of a polyanionic **fluorescent dye** (PFD) in low dielectric media, comprises: (a) incorporating the PFD in a low dielectric medium, in which the PFD is quenched; (b) adding an activation cpd. including a quat. onium cpd. which interacts with the quenched **fluorophore** in a manner to restore the **fluorescence** and create an activated **fluorophore** in the low dielectric medium; and (c) measuring the **fluorescence** or **fluorescence** parameter generated.
USE - The process may be used e.g. to activate **fluorescence** in **polymer coatings** where the **fluorescence** would normally be quenched. The **polymer coatings** may be used as **fluorescent coatings** or as transducer **coatings** for optical **sensors**.
ADVANTAGE - The process allows the PFD to retain its **fluorescence** activity in situations where it would otherwise not be useful as an analytical reagent.
Dwg.0/8
FS CPI
FA AB; DCN
MC CPI: A12-B01; A12-L03; A12-L04; B04-C02A; B04-C03B; B04-C03D; B06-A03; B10-A09B; B10-A22; B10-E04D; B10-J02; **B11-C07B3**; B12-K04; E10-A22A; E10-A22G; J04-X
ABEQ EP 716740 B UPAB: 19970313
A method for activating the **fluorescence** of a polyanionic **fluorescent dye** in a low dielectric medium characterised in that it comprises: (a) incorporating the **fluorescent dye** in a low dielectric medium, which may be liquid, **gaseous** or solid, such **dye** being quenched in such medium; (b) adding an activation component including a quaternary onium compound, which interacts with the quenched **fluorophore** in a manner to restore the **fluorescence** and create an activated **fluorophore** in the low dielectric medium; and (c) measuring the **fluorescence** or **fluorescent**-related parameter generated.
Dwg.0/8
L141 ANSWER 25 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
AN 1994-167643 [20] WPIX
CR 1995-169212 [22]
DNN N1994-131883 DNC C1994-076871
TI Fibre-optic probe for **colorimetric** measurements of fluids - each fibre having optical gap forming chamber containing **colorimetric sensor** material and enclosed by analyte permeable membrane.
DC A89 B04 J04 P31 S03 S05 V07
IN SINGH, R
PA (OPTE-N) OPTEX BIOMEDICAL INC
CYC 18
PI WO 9410553 A1 19940511 (199420)* EN 97 G01N021-64 <--
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
W: CA JP
ADT WO 9410553 A1 WO 1993-EP2772 19931007
PRAI US 1992-965193 19921023
REP 6.Jnl.Ref; EP 344313; EP 352610; JP 53039979; US 4727730; US 4889407; US 4994396; US 5047208; US 5119463; WO 8700920; WO 9118306
IC ICM **G01N021-64**
ICS A61B005-00; **G01N021-77**
AB WO 9410553 A UPAB: 19950619
An optical probe for **colorimetric** measurement includes a body

(14) with a tip and containing **sensors** (12). These are each formed by an optical fibre with a small slice extracted from it near its tip to form an optical gap. A chamber opens from the surface of the body and extends into its interior to expose the faces of the optical fibre at the gap. **Colorimetric sensor** material is located in the chamber. An analyte-permeable membrane (28) covers the chamber opening.

The **colorimetric sensor** material comprises a water-soluble **indicator** retained by either being covalently bonded to a solid support (22) or by the support being encapsulated in a water-insoluble **coating**.

Also claimed is **gas analyte sensor indicator matrix** paste for use in a fibre optic **sensor** probe. The paste comprises an **indicator matrix** containing **indicator** molecules on a support of either porous glass particles or a **silica** gel based porous material and a support **polymer** of nonionic gel. Also claimed is a **gas** analyte-permeable membrane comprising a **coating** of a cellulose acetate ester. Also claimed is a fibre-optic probe with an anti-thrombogenic overcoating.

USE/ADVANTAGE - The probe monitors fluid parameters, especially physiological blood characteristics, e.g. blood pH, pO₂, or pCO₂ and electrolytes. A single probe can measure several parameters so that a patient is not overtaxed with a number of separate probes.

Dwg.2/3

FS CPI EPI GMPI

FA AB; GI; DCN

MC CPI: A12-L03A; A12-V03C2; B04-B04D5; B04-C02A3; B04-C03; B04-D02;
B05-A03B; B05-B02C; B05-C04; B05-C08; B06-D13; B07-D04C; B11-C02;
B11-C04; B11-C07B2; B12-K04A; B14-F04; J04-B01
EPI: S03-E04E; S03-E14H1; S05-D01G; V07-X

L141 ANSWER 26 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1994-116971 [14] WPIX

CR 1993-060066 [08]; 1993-145347 [18]; 1993-145348 [18]; 1995-177523 [23];
1996-159694 [16]

DNN N1994-091609 DNC C1994-054230

TI Analyte **sensor** especially for **oxygen** in blood - contains
analyte-**sensitive indicator** component covalently
bonded to **polymeric matrix** material.

DC A89 B04 E14 E36 J04 S02 S03

IN CARLOCK, J T; KORKOWSKI, P F; MADER, R A; YAFUSO, M; YAN, C

PA (MINN) MINNESOTA MINING & MFG CO

CYC 1

PI US 5296381 A 19940322 (199414)* 10 G01N021-64 <--

ADT US 5296381 A US 1991-742002 19910808

PRAI US 1991-742002 19910808

IC ICM G01N021-64

AB US 5296381 A UPAB: 19960428

A **sensing** element (I) comprises a **matrix** material covalently bonded to **indicator** component(s) (A) capable of providing a signal dependent on the concentration of an analyte in a medium (A) are derived from **indicator** cpd(s). having an aromatic ring directly covalently bonded to gp. including a functional portion which is conjugated relative to the aromatic ring.

A method for producing (I) comprises contacting a compsn. containing precursor(s) of the **indicator** component(s) and a reactable material under conditions to form the **indicator**-bonded **matrix**.

The **matrix** material is pref. a silicone-based **polymer** which is **crosslinked** during the production of (I).

The **indicator** cpd. is a polynuclear aromatic cpd. and includes decacyclene and its derivs., perylene and its derivs.,

benzo(ghi)perylene and its derivs. and/or coronene and its derivs. The functional portion pref. a C=C double bond and opt. includes a heteroatom. The **indicator** cpd. is especially a vinyl benzo(ghi)perylene derivative

USE/ADVANTAGE - The **sensor** is useful for **sensing** the concentration of **gaseous** components such as **oxygen** or **CO2** in a medium such as blood. It is partic. useful in an in vivo blood **oxygen sensor**. Large amts. of covalently attached **indicator** component can be included in the **matrix** material to provide an intense signal, and the **indicator** has a reduced tendency to escape from the **matrix**

Dwg.0/1

Dwg.0/1

FS CPI EPI

FA AB

MC CPI: B04-B04D5; B04-C03D; B05-C08; B06-H; B08-D02; B08-D03;

B11-C07B3; B12-K04A

EPI: S02-F04C; S03-E04D; S03-E14H1

L141 ANSWER 27 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1994-010442 [02] WPIX

DNN N1994-008381 DNC C1994-004250

TI **Sensor** membrane for optical **sensor** of physical or chemical parameter - with **indicator** comprising ion pair of cationic or anionic dyestuff, and immobilising counter ion compatible with **polymer matrix**.

DC A14 A26 A89 E36 J04 S03

IN KARPFF, H; KLIMANT, I; KOVACS, B; LEINER, M J; WOLFBEIS, O S; LEINER, M J P

PA (AVLV) AVL GES VERBRENNUNGSKRAFT & MESSTECHNIK; (AVLV) AVL MEDICAL INSTR

AG

CYC 4

PI EP 578630 A1 19940112 (199402)* GE 8 G01N021-77 <--

R: AT DE FR GB

AT 9201409 A 19940915 (199436) G01N031-00 <--

AT 399402 B 19950315 (199516) G01N031-00 <--

EP 578630 B1 19960221 (199612) GE 11

R: AT DE FR GB

DE 59301669 G 19960328 (199618) G01N021-77 <--

ADT EP 578630 A1 EP 1993-890131 19930630; AT 9201409 A AT 1992-1409 19920709;

AT 399402 B AT 1992-1409 19920709; DE 59301669 G DE 1993-501669 19930630;

EP 1993-890131 19930630

FDT AT 399402 B Previous Publ. AT 9201409; DE 59301669 G Based on EP 578630

PRAI AT 1992-1409 19920709

REP DE 4118681; EP 190830; EP 283206

IC ICM **G01N021-77**; **G01N031-00**

ICS **G01N021-64**; **G01N031-22**

AB EP 578630 A UPAB: 19961205

Sensor membrane for an optical **sensor** for determin. of a physical or chemical parameter of a sample (I) has a homogeneous **indicator** substance (II), immobilised in the **polymer matrix** (III) of the membrane. This is in at least indirect contact with (I) and its optical properties change when the parameter under test changes. (II) is in the form of an ion pair, comprising a cationic or anionic dyestuff mol. (IIA) and counterion(s) (IIB) compensating the electrical charge of (IIA).

The novelty is that (IIB) is derived from cpds. containing an ionic gp. and (a) an oligomer gp. of the monomer from which (III) is derived, (b) long-chain alkyl(ene)gps. or (c) silyl gps. has physicochemical properties suited to those of (III) and anchors (IIA) to (III).

USE/ADVANTAGE - The membrane is used for determin. of (1) O2, SO2 or H2O2 concentration by extinction of **fluorescence**; (2) H+ (pH), NH3, CO2, or SO2 concentration (3) redox potential; and (4) concentration of ions, e.g. H+, Na+, K+, Ca++, Cl-, Mg++, Pb++, Cd+, UO2++, NO3-, Tl+ or Sr++

(claimed). The characteristic properties of (IIA) are not or are only slightly impaired by immobilisation.

In an example, a solution of 226 mg RuCl₂.3H₂O in a 5ml ethylene glycol and 0.5ml H₂O was heated to 160 deg.C under reflux (**colour** change from red-yellow to blue-green) and 860mg solid, 4,7-diphenyl-1,10-phenanthroline (diph) were added at 120 deg.C. After 45 min. reaction at 160 deg.C 1 ml reaction mixture were treated with 10 ml H₂O and 2ml acetone. 5ml saturated Na trimethylsilylpropane sulphonate solution

were

added. The ion pair precipitated from the solution comprising the (tris(4,7-diphenyl-10,10-phenanthroline) Ru(II))₂⁺ = Ru(diph)₃ cation with trimethylsilylpropane sulphonate counterion, was filtered, purified and recrystallised from acetone. 5g silicone **prepolymer** ('PS252'; RTM; unfilled one-component silicone, curing at room temperature with evolution of acetic acid in dioxane/THF mixt) were mixed with 5ml 0.001 M solution of the ion pair in CHCl₃. The solution was cast on 'Mylar' (RTM) film in a thickness of 30 microns and dried 12h at 90 deg.C in the absence of moisture. The finished membrane was intense yellow in **colour** and intensely **fluorescent** and very **sensitive** to O₂.

Dwg.0/0

FS CPI EPI

FA AB; DCN

MC CPI: A12-L04A; E11-Q03L; E31-D02; E31-E; E31-F04; J04-C

EPI: **S03-E04E**

ABEQ EP 578630 B UPAB: 19960322

Sensor membrane of an optical **sensor** for determining a physical or chemical parameter of a sample with an **indicator** substance that is homogeneously immobilised in the **polymer matrix** of the **sensor** membrane and is, at least indirectly, in contact with the sample and will change at least one of its optical properties upon a change of the parameter to be measured, the **indicator** substance being provided as ion pair and consisting of a cationic or anionic **dye** molecule and at least one counterion compensating the electric charge of the **dye** molecule, wherein the counterion is derived from cpds. contg. a ionic gp. and (a) an oligomer residue of the monomer forming the basis of the respective **polymer matrix**, (b) long-chain alkyl or alkene gps. or (c) silyl gps., the counterion having physico-chemical properties matching the physico-chemical properties of the **polymer matrix** and the **dye** molecule being embedded in the **polymer matrix** of this counterion.

Dwg.0/0

L141 ANSWER 28 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1993-379056 [48] WPIX

DNN N1993-292728 DNC C1993-168256

TI A **microsensor** used to detect e.g. blood pH levels of

oxygen and **carbon di oxide** -

comprising optical fibre having portion on the surface of a light conducting core covered with a layer containing analyte **sensitive dye** material.

DC A14 A89 B04 E24 J04 P31 S03 V07

IN BANKERT, C S; HUI, H K; NELSON, A M

PA (PURI-N) PURITAN BENNETT CORP

CYC 8

PI EP 572157 A1 19931201 (199348)* EN 13 G01N021-77 <--
R: DE FR GB IE IT

US 5266271 A 19931130 (199349) 9 G01N021-64 <--

CA 2095414 A 19931123 (199407) G01N033-52

JP 06058880 A 19940304 (199414) 12 G01N021-77 <--

ADT EP 572157 A1 EP 1993-303857 19930519; US 5266271 A US 1992-887476
19920522; CA 2095414 A CA 1993-2095414 19930503; JP 06058880 A JP
1993-121353 19930524

PRAI US 1992-887476 19920522
 REP EP 244929; EP 352610; EP 481740; US 5047627
 IC ICM **G01N021-64**; **G01N021-77**; G01N033-52
 ICS A61B005-14; G01J001-02; **G01N021-78**; **G01N031-22**
 ICA A61B005-00
 AB EP 572157 A UPAB: 19940223

An analyte **sensor**, comprises: (i) a **sensor** member having a **sensor** surface; (ii) an analyte **sensing matrix** covalently bonded to said **sensor** surface, the analyte **sensing matrix** including a **copolymer** having first and second monomer portions formed from a selected ratio of a first monomer having a first type of functional group providing a bonding site for covalent bonding to a first **dye indicator** material, and a second monomer having a second type of functional group providing a bonding site for covalent bonding to a second **dye indicator** material and for **cross-linking**; (iii) a first **dye indicator** material covalently bonded to first monomer portion of **copolymer**; (iv) a second **dye indicator** material covalently bonded to a portion of the available bonding sites of second monomer portion of **copolymer**, and (v) a **crosslinking** agent covalently bonded to **sensor** surface and covalently bonded to a remaining portion of the available bonding sites of second monomer portion of **copolymer**.

USE/ADVANTAGE - The **sensor** can be used for measuring multiple parameters such as **oxygen**, **carbon dioxide** and pH of a fluid (such as blood) or **gaseous** mixture. The **dye indicator** materials are covalently bonded to a **copolymer** which is covalently bonded with a **crosslinking** agent to the surface of the core of the optical fibre (see Preferred **Sensor**) to prevent leaching of the **dye indicator** during extended use. The **dye copolymer** is **crosslinked** in situ over the tip of the optical fibre to give an ion perme **sensor** which can be used intravascularly to monitor one or more blood parameters. The use of a blocked **crosslinking** agent also increases the ease of manufacturing the improved **microsensor** by prolonging pot life and allowing for on demand heat curing.

Dwg.2/2

FS CPI EPI GMPI
 FA AB; GI; DCN
 MC CPI: A12-L04; A12-V03C1; B11-C07; E11-Q03C; E31-D02; E31-N05C
 EPI: **S03-E04E**; S03-E09E; S03-E14H1; S03-E14H9; V07-F01A1; V07-N;
 V07-X

ABEQ US 5266271 A UPAB: 19940126

Analyte **sensor** has an analyte **sensing matrix**

(I) covalently bonded to the outer surface of an optical fibre, (I) comprises: (a) a first monomer, pref. hydroxyethyl methacrylate, covalently bonded to a first **dye indicator** and (b) a second monomer, pref. azindynyl ethyl methacrylate, covalently bonded to a second **dye indicator**, pref. hydroxypyrene trisulphonic acid.

A **crosslinking** agent, pref. a polyether isocyanate, is covalently bonded to the surface of the optical fibre and to bonding sites in the second monomer.

USE/ADVANTAGE - For in vivo, intravascular measurement of blood pH, O2 and CO2 contents. Leaching of **indicator** material during prolonged use is prevented.

Dwg.1/2

L141 ANSWER 29 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
 AN 1993-346656 [44] WPIX
 DNN N1993-267761 DNC C1993-153448
 TI Mfr. of analyte **sensor** especially for ion permeable optical fibre

micro-sensors for blood use - by mixing **crosslinking**
agent and inhibitor with liquid **polymeric** analyte **sensing**
matrix, prolongs pot life of **matrix**.

DC A14 A26 A89 B04 E19 J04 S02 S03 S05

IN NELSON, A M; SOIKOWSKI, C L

PA (PURI-N) PURITAN BENNETT CORP

CYC 9

PI EP 568274 A1 19931103 (199344)* EN 8 G01N021-77 <--
R: DE FR GB IE IT

US 5262192 A 19931116 (199347) 6 G02B006-22

CA 2093592 A 19931028 (199404) G01N033-84

JP 06074901 A 19940318 (199416) 7 G01N021-77 <--

US 5326585 A 19940705 (199426) 6 G02B006-22

ADT EP 568274 A1 EP 1993-303162 19930422; US 5262192 A US 1992-874031
19920427; CA 2093592 A CA 1993-2093592 19930407; JP 06074901 A JP
1993-101143 19930427; US 5326585 A Cont of US 1992-874031 19920427, US
1993-108108 19930817

FDT US 5326585 A Cont of US 5262192

PRAI US 1992-874031 19920427

REP EP 263692; EP 481740; US 4842783; WO 9105513

IC ICM G01N021-77; G01N033-84; G02B006-22

ICS A61B005-14; B05D005-06; G01N021-64; G01N021-78;
G01N033-52

AB EP 568274 A UPAB: 19931213

Making an analyte **sensor** having a substrate surface and a
polymeric analyte **sensing matrix** including a
dye indicator material, by: preparing a liquid polymeric
analyte **sensing matrix**; mixing with a
crosslinking agent and a **crosslinking** inhibitor
removable by elevated temperature exposure; applying to the substrate surface;
and exposing to elevated temperature for sufficient time to remove the
inhibitor, allowing **crosslinking** of the **sensing**
matrix in situ. The method may further include applying a layer of
uncured overcoat mixture of **crosslinking** agent and
crosslinking inhibitor removable by elevated temperature exposure over
the **sensing matrix** after curing; and exposing to
elevated temperature for sufficient time to remove the inhibitor, permitting
crosslinking of the overcoat mixture in situ.

USE/ADVANTAGE - The **sensors** are useful for chemical and
biomedical analysis of fluid or **gaseous** mixts., especially ion
permeable optical fibre **microsensors** for measuring blood
constituents, e.g. O₂, CO₂, and pH. The
crosslinking behaviour of the **sensing matrix**
can be closely controlled, significantly facilitating automation of mfr.
The **crosslinking** inhibitor prolongs pot life of the analyte
sensing matrix and overcoat mixts.

Dwg.0/0

FS CPI EPI

FA AB; DCN

MC CPI: A08-C01; A08-D01; A11-B05; A11-C02C; A12-L04; A12-V03C2; B04-B04D5;
B04-C03; B05-C04; B05-C08; B06-A03; B08-A; B08-C01; B11-C07B1;
B12-K04; E11-Q03; E31-A02; E31-N05C; J04-B01

EPI: S02-F04C; S03-E03X; S03-E04D; S03-E04E; S03-E14H1; S05-C01;
S05-C09; S05-D01G

ABEQ US 5262192 A UPAB: 19940111

Mfr. comprises: i) preparing a **copolymer** of hydroxyethyl
methacrylate and N-(3-aminopropyl)methacrylate and covalently bonding
dye indicator to **copolymer** to form a liq.
polymer analyte **sensing matrix**; ii) forming a
liq. mixt. of liq. **polymeric** analyte **sensing**
matrix with a **crosslinking** agent and a
crosslinking inhibitor which can be removed; iii) **coating**
the optical fibre surface with liq. mixt.; and iv) heating the liq. mixt.

on the optical fibre surface for sufficient time to remove the **crosslinking** inhibitor from the liq. mixt.. **Crosslinking** agent **crosslinks** the liq. **polymeric** analyte **sensing matrix** in situ on the optical fibre surface to produce a curved **sensing matrix**. **Crosslinker** comprises a blocked polyether isocyanate.

USE/ADVANTAGE - In an analyte **sensor** including an optical fibre having a surface portion covered with a **polymer** analyte including a **dye indicator**.

ABEQ US 5326585 A UPAB: 19940817

Prepn. of an analyte **sensor** ind. an optical fibre with a surface covered in a **sensing matrix** contg. a **dye** comprises:- (a) preparing an analyte-permeable **polymer** with a **dye** covalently bonded to form a liquid **matrix**; (b) forming a mixt. of the **matrix** with a **crosslinking** agent and an inhibitor; (c) **coating** optical fibre surface with the mixt.; and (d) heating to remove **crosslinking**.

USE - Used to intravascularly monitor pH or partial pressures of O₂ or CO₂ in blood.

Dwg.0/0

L141 ANSWER 30 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1993-303642 [38] WPIX

DNC C1993-135298

TI **Crosslinked gas**-permeable membrane - comprises **gas-sensitive indicator** incorporated into cured perfluorinated urethane **copolymer matrix**, used in optical **gas sensors**.

DC A25 A89 J04

IN OLSTEIN, A

PA (OPTI-N) OPTICAL SENSORS INC

CYC 20

PI WO 9318391 A1 19930916 (199338)* 33 G01N021-17

RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

W: AU CA JP

AU 9337831 A 19931005 (199405) G01N021-17

EP 630469 A1 19941228 (199505) EN G01N021-17

R: DE FR GB IT

JP 07507136 W 19950803 (199539) 11 G01N021-78 <--

US 5453248 A 19950926 (199544) 11 G01N021-64 <--

EP 630469 A4 19951122 (199626) G01N021-17

AU 669515 B 19960613 (199631) G01N021-78 <--

US 5631340 A 19970520 (199726) 8 C08G018-58

ADT WO 9318391 A1 WO 1993-US1827 19930226; AU 9337831 A AU 1993-37831 19930226; EP 630469 A1 EP 1993-907111 19930226; WO 1993-US1827 19930226; JP 07507136 W JP 1993-515815 19930226; WO 1993-US1827 19930226; US 5453248 A CIP of US 1992-848627 19920309, US 1992-911175 19920812; EP 630469 A4 EP 1993-907111 ; AU 669515 B AU 1993-37831 19930226; US 5631340 A CIP of US 1992-848627 19920309, Div ex US 1992-911175 19920812, US 1995-396632 19950301

FDT AU 9337831 A Based on WO 9318391; EP 630469 A1 Based on WO 9318391; JP 07507136 W Based on WO 9318391; AU 669515 B Previous Publ. AU 9337831, Based on WO 9318391

PRAI US 1992-911175 19920812; US 1992-848627 19920309;
US 1995-396632 19950301

REP US 4321057; US 4508916; US 4816130; US 5004790; US 5151535; EP 279576; EP 352610; US 4842783; US 4994396; US 5054882

IC ICM C08G018-58; G01N021-17; **G01N021-64**; **G01N021-78**

ICS B01D071-32; C08L075-08

AB WO 9318391 A UPAB: 19931123

A **crosslinked gas**-permeable membrane (I), useful in optical **gas sensors** (II) for measuring O₂ or CO₂ in a fluid, comprises: a cured perfluorinated urethane

copolymer matrix (III) which incorporates a **gas-sensitive indicator** component (IV).

Also claimed are: (A) (II), which comprises an optical waveguide (V) having a distal end portion (Va), which incorporates (I) and monitors a **gas** component within a fluid, and a proximal end (VI) for communication, with means for receiving signals from (Va); and (B) a method for making (II) which involves **coating** (Va) with a solution containing a photocurable **polymeric** precursor and (IV). The precursor is **crosslinked** by irradiating (Va) through (V), with a suitable wavelength.

USE/ADVANTAGE - (I) is used for detecting and measuring dissolved **gases** e.g. **O2** and **CO2** in the bloodstream.

Other applications include on-line **sensing** of a flowing fluid stream. (II) has improved **sensitivity**, resolution, solvent resistance, photostability and resistance to shear.

9

Dwg.1/3

FS CPI

FA AB; GI

MC CPI: A05-G01E; A11-B05D; A11-C02B; A12-E11; A12-E13; A12-V03C2; J01-E03E; J04-C04

ABEQ US 5453248 A UPAB: 19951109

The **crosslinked gas** permeable membrane for optical **gas sensors** for measuring **O2** or **CO2** in a fluid, comprises a **polymeric matrix** of a cured perfluorinated urethane **polymer**, the **matrix** having a **gas-sensitive indicator** component incorporated in it, where the cured perfluorinated urethane **polymer** comprises 95-99.5 wt.% of a perfluorinated urethane **polymer** precursor **crosslinked** with 0.5-5 wt.% of a **crosslinking** agent, and further where the precursor has the general formula $\text{OCN-Ar-NH-C(=O)--O-X-C(=O)-NH-Ar-NCO}$.

Ar is a monocyclic aromatic moiety; and X is a perfluorinated polyether linkage contg. 2-100 recurring perfluorinated mer units having the structure $-(\text{CF}_2\text{O})-$ and/or $-(\text{CF}_2\text{CF}_2\text{O})-$.

Pref. the **crosslinking** agent is water.

Pref. the **gas-sensitive indicator** is **fluorescein**, **carboxyfluorescein**, **seminaphthorhodafluor**, **semi-naphthofluorescein**, **naphthofluorescein**, **hydroxypyrene trisulphonic acid** and **dichlorofluorescein**.

USE/ADVANTAGE - The membrane is for use as **gas sensors**. 9- to 10-fold increase in life is obtd.

Dwg.0/3

ABEQ US 5631340 A UPAB: 19970626

A cured perfluorinated urethane **polymer** prepared by the process which comprises **cross-linking** a perfluorinated urethane **polymer** precursor having the structural formula $\text{OCNArNHOCOXOCNHA rNCO}$ (I) wherein Ar is a monocyclic aromatic moiety and X is a perfluorinated polyether linkage containing approximately 2 to 100 recurring perfluorinated mer units having the structure $\langle \text{code +545} \rangle \text{CF}_2\text{O} \langle \text{code +546} \rangle$, $\langle \text{code +545} \rangle \text{CF}_2\text{CF}_2\text{O} \langle \text{code +546} \rangle$, or combinations thereof, with a **cross-linking** agent selected from the group consisting of water, diols of the formula HO-R-OH wherein R is alkylene of 1 to 6 carbon atoms, bisphenol A and hexafluorobisphenol A, wherein the **cross-linking** agent is present such that, it represents on the order of 0.5 to 5 wt. % of the cured perfluorinated urethane **polymer**.

Dwg.1/3

L141 ANSWER 31 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1992-351419 [43] WPIX

CR 1998-217281 [19]; 2002-597712 [64]; 2003-447312 [42]

DNN N1992-267939 DNC C1992-155934

TI Detecting **respiring** microorganisms in fluid - using **fluorescent** cpd. which exhibits reduction in **fluorescent** intensity in the presence of **oxygen**.

DC B04 D16 S03

IN BURRELL, G J; HU, K; MONTHONY, J F; SAPITOWICZ, R; STITT, D T

PA (BECT) BECTON DICKINSON CO; (BECT) BECTON DICKINSON & CO

CYC 8

PI EP 509791 A1 19921021 (199243)* EN 23 C12Q001-00
 R: DE FR GB IT
 AU 9214829 A 19921022 (199250) C12Q001-04
 CA 2066329 A 19921019 (199302) C12Q001-04
 JP 05137596 A 19930601 (199326) 18 C12Q001-04
 AU 647609 B 19940324 (199417) C12Q001-04
 JP 07073510 B2 19950809 (199536) 18 C12Q001-04
 EP 509791 B1 19960703 (199631) EN 22 C12Q001-00
 R: DE FR GB IT
 DE 69211895 E 19960808 (199637) C12Q001-00
 US 5567598 A 19961022 (199648) 18 C12Q001-18
 CA 2066329 C 20000620 (200043) EN C12Q001-04

ADT EP 509791 A1 EP 1992-303391 19920415; AU 9214829 A AU 1992-14829 19920410; CA 2066329 A CA 1992-2066329 19920416; JP 05137596 A JP 1992-98368 19920418; AU 647609 B AU 1992-14829 19920410; JP 07073510 B2 JP 1992-98368 19920418; EP 509791 B1 EP 1992-303391 19920415; DE 69211895 E DE 1992-611895 19920415, EP 1992-303391 19920415; US 5567598 A Cont of US 1991-687359 19910418, US 1993-25899 19930303; CA 2066329 C CA 1992-2066329 19920416

FDT AU 647609 B Previous Publ. AU 9214829; JP 07073510 B2 Based on JP 05137596; DE 69211895 E Based on EP 509791

PRAI US 1991-687359 19910418; US 1993-25899 19930303

REP DE 3346810; EP 333253; EP 448923

IC ICM C12Q001-00; C12Q001-04; C12Q001-18
 ICS C12M001-34; G01N021-62; G01N021-64; G01N021-78

AB EP 509791 A UPAB: 20030703
 (A) A method for detecting the presence of **respiring** microorganisms in a fluid is claimed, comprising (a) contacting the fluid with a **sensor** compsn. which comprises a **fluorescent** cpd. (FC) that exhibits a reduction in **fluorescent** intensity when irradiated with light contg wavelengths which cause the cpd. to **fluoresce** upon exposure to **oxygen**, (b) irradiating the **sensor** compsn. with light containing wavelengths which cause the FC to **fluoresce**. (c) measuring or visually observing the **fluorescent** light intensity from the FC and (d) comparing the measurement to that of a control not containing a **respiring** microorganism, where an increase in **fluorescent** intensity is **indicative** of the presence of **respiring** microorganisms. The FC may be tris-4,7-diphenyl-1,10-phenanthroline ruthenium (II) salts or tris-2,2'-bipyridyl ruthenium (II) salts.
 Also claimed are (B) a method of determining the effect of an antibiotic or antimicrobial compsn. on a **respiring** microorganism, comprising (a) preparing a broth of the microorganism, (b) contacting the broth with a **sensor** compsn. as in (A) (c) admixing with the broth, a quantity of the antibiotic or antimicrobial compsn. (d) irradiating the **sensor** compsn. with light containing wavelengths which cause the FC to **fluoresce**, (e) measuring or visually observing the intensity of **fluorescent** light from the FC and (f) comparing the measurement to that of a negative control not in contact with **respiring** microorganisms, where an increase in **fluorescent** intensity relative to the control is **indicative** of the presence of **respiring** organisms, thereby **indicating** the ineffectiveness of the quantity of the antibiotic or antimicrobial compsn.
 USE/ADVANTAGE - The method can be used for the rapid measurement

and/or detection of **respiring** microorganisms. The method can also be used to detect the presence of **O2** dependent compsns. such as enzymes. It can also be used to test the susceptibility of a microorganism to a cpd. such as an antibiotic.

Dwg.1/6

FS CPI EPI

FA AB; GI; DCN

MC CPI: B04-B02B; B04-B02C; B05-A03B; B06-D15; B07-D04C; **B11-C07B3**;
B11-C08E1; B12-K04; D05-H09
EPI: S03-E04D; S03-E14H5

L141 ANSWER 32 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1992-216281 [26] WPIX

CR 1987-300757 [43]; 1988-100087 [15]; 1988-100088 [15]; 1989-317836 [44];
1990-163538 [21]; 1991-124840 [17]; 1992-023800 [03]

DNN N1992-164234 DNC C1992-097915

TI **Sensor** for **sensing** concentration of a component in blood -
using an **indicator** encased in a component permeable
polymeric matrix in rigid sleeve.

DC A89 B04 S03

IN GOURLEY, T H; HACKER, T G; MAXWELL, T P; MILLER, W W; YAFUSO, M

PA (MINN) MINNESOTA MINING & MFG CO

CYC 1

PI US 5120510 A 19920609 (199226)* 8 G01N021-64 <--

ADT US 5120510 A CIP of US 1986-853460 19860418, Cont of US 1986-917913
19861010, CIP of US 1987-49844 19870515, CIP of US 1987-91433 19870831,
Cont of US 1988-206189 19880613, US 1990-624200 19901206

FDT US 5120510 A CIP of US 4798738, CIP of US 4824789, CIP of US 4919891, Cont
of US 5006314

PRAI US 1988-206189 19880613; US 1986-853460 19860418;
US 1986-917913 19861010; US 1987-49844 19870515;
US 1987-91433 19870831; US 1990-624200 19901206

IC ICM **G01N021-64**

AB US 5120510 A UPAB: 19961004

Indicator material for providing a signal which depends on the concentration of a predetermined component in blood is encased in a blood component permeable solid **polymeric matrix** to form a **sensing** element (18), which is sized so as to be positioned within a blood vessel of a patient. The **sensing** element is positioned at the end of an elongate signal transmission device (12) with a sleeve (19) secured to the end of the signal transmission device to extend distally thereof to form a pocket in which the **sensing** element is mounted.

Signal transmission device (12) is an optical fibre and the sleeve (19) is of glass. The **indicator** is a **fluorescence** **indicator**. The sleeve (19) is secured to the optical fibre by an adhesive (16) containing additional amounts of **indicator** material and the assembly is provided with an overcoating of blood insoluble, component permeable **polymeric** material with an effective amount of an opaque agent. The fibre (12) can be provided with a **coating** (22) sealed to the assembly with material (24) which can be the same as overcoating (20).

USE/ADVANTAGE - Partic. as a **sensor** to be positioned in a vein or artery of a patient to measure the presence of **oxygen**, **carbon dioxide**, hydrogen ions, electrolytes, glucose, etc. in blood. Rigid sleeve (19) reinforces the junction between the transmission device, e.g. an optical fibre, and the **sensing** element to ensure accurate and consistent measurements.

1/4

Dwg.1/4

Dwg.1/4

FS CPI EPI

FA AB; GI; DCN

MC CPI: A12-L03A; A12-V03C2; B04-B04D5; B04-C03; B05-C04; B05-C08; B10-A07;
 B11-C04; **B11-C07B3**; B12-K04A
 EPI: S03-E04D; S03-E04X; S03-E14H1

L141 ANSWER 33 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1992-105989 [14] WPIX

DNN N1992-079431 DNC C1992-049506

TI Appts. for monitoring blood **gas** concns. - comprising optical fibre.

DC J04 P31 S03

IN HUSS, B D; KHALIL, G; PIHL, R J; VUREK, G G; YIM, J B; KHALIL, G E

PA (ABBO) ABBOTT LAB

CYC 17

PI EP 477501 A 19920401 (199214)* 17

R: AT BE CH DE DK ES FR GB IT LI NL SE

US 5098659 A 19920324 (199215) 13

AU 9181502 A 19920326 (199222)

G01N031-22 <--

CA 2050738 A 19920325 (199223)

G01N021-64 <--

JP 04305143 A 19921028 (199250) 13

G01N021-77 <--

EP 477501 A3 19920708 (199334)

AU 646278 B 19940217 (199412)

G01N031-22 <--

ADT EP 477501 A EP 1991-112874 19910731; US 5098659 A US 1990-587234 19900924;

AU 9181502 A AU 1991-81502 19910730; CA 2050738 A CA 1991-2050738

19910905; JP 04305143 A JP 1991-240927 19910920; EP 477501 A3 EP

1991-112874 19910731; AU 646278 B AU 1991-81502 19910730

FDT AU 646278 B Previous Publ. AU 9181502

PRAI US 1990-587234 19900924

REP No-SR.Pub; 2.Jnl.Ref; EP 352610; EP 357586

IC ICM **G01N021-64**; **G01N021-77**; **G01N031-22**

ICS A61B005-14; G01N021-31; G01N021-63; G01N021-76; G01N021-84;

G01N033-497

AB EP 477501 A UPAB: 19931119

Probe for monitoring a plurality of chemical parameters comprising (a) an optical fibre having a longitudinal axis along which light signals at a number of wavelengths are propagated bidirectionally; (b) an optical **sensor** attached adjacent to a distal end of the optical fibre and comprising a first analyte **indicator**, light signals of a first wavelength being absorbed by the first analyte **indicator** to an extent dependent upon the amount of the first analyte present; and (c) a **polymer matrix** material in which a second analyte **indicator** is provided, being disposed adjacent to the distal end of the optical fibre and adjacent the optical **sensor**, light signals of the second wavelength transmitted to the distal end of the optical fibre exciting the second analyte **indicator** to emit light, a decay time of the light emission varying in response to a concentration

of the second analyte.

USE - For monitoring chemical analyte concns. in blood e.g.

O₂, CO₂, and pH.

3/7

FS CPI EPI GMPI

FA AB; GI; DCN

MC CPI: A12-L03A; A12-L04; A12-V03C2; B04-B04D5; B04-C03; B05-C04; B05-C08;
 B06-D18; B10-A09B; B11-C07B4; B12-K04A; J04-C04

ABEQ US 5098659 A UPAB: 19931006

A probe for monitoring chemical parameters comprises an optical fibre with a longitudinal axis along which light signals at various wavelengths are propagated bidirectionally. An optical **sensor** is attached to a distal end of the fibre. The **sensor** consists of a first analyte **indicator** which absorbs light signals of a first wavelength to an extent dependent on the amt. of a first analyte present.

A **polymer matrix** material is disposed adjacent the fibre distal end adjacent the optical **sensor**. A second

analyte **indicator** is provided in the **matrix**. Light signals of a second wavelength are transmitted to the distal end of the fibre, exciting the second analyte **indicator** to emit light whose decay time varies in response to the concn. of the second analyte.

USE - The appts. is esp. for blood **gas** monitoring. Pref. the first measured parameter is **carbon dioxide** and the second hydrogen ion concn. expressed as a pH level. Alternatively **oxygen** content may be monitored.

1/7

L141 ANSWER 34 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
 AN 1991-317410 [43] WPIX
 CR 1992-415315 [50]
 DNN N1991-243243 DNC C1991-137218
 TI Multiple optical fibre event **sensor** - having **gas sensors** in staggered relation in hydrophobic semipermeable **polymeric matrix** in a semipermeable tubular sleeve.
 DC A96 B04 J04 P31 P81
 IN RICCITELLI, S D; SHERN, T A
 PA (PURI-N) PURITAN-BENNETT; (PURI-N) PURITAN-BENNETT COR
 CYC 15
 PI US 5054882 A 19911008 (199143)*
 EP 471519 A 19920219 (199208)
 R: AT BE CH DE ES FR GB GR IT LI LU NL SE
 CA 2048869 A 19920211 (199218)
 CA 2048892 A 19920211 (199218)
 ADT US 5054882 A US 1990-565496 19900610; EP 471519 A EP 1991-307347 19910809
 PRAI US 1990-565495 19900810
 REP EP 336985; EP 352610; US 4727730
 IC A61B005-00; G01N021-64; G01N021-84; G02B006-16
 AB US 5054882 A UPAB: 19930928
 Number of optical fibre **gas sensors** (16a,b,c) each having a distal end bearing a **sensor** module (14a,b,c) are disposed in axially staggered relation within a tubular semipermeable sleeve (12) with the **sensor** modules being surrounded and fixed in position by a semipermeable **polymeric matrix** (18) which fills the sleeve and which is hydrophobic in the portion surrounding the **sensor** modules. The **polymeric matrix** has a rounded tip extending beyond the distal end of the sleeve.
 Pref. the **sensors** include a blood **oxygen** and blood **carbon dioxide sensors** which are disposed within a hydrophobic **polymeric matrix** portion of silicone and a blood pH **sensor** (14a) disposed in a **matrix** portion (19) of hydrophilic hydrogel or polyurethane. The tubular sleeve (12) is of silicone and has a wall thickness of less than 0.002 inch. A temperature **sensor** (22) can be included within the sleeve.
 USE/ADVANTAGE - Used as a multiple event **sensor** for performing analysis of multiple analytes, e.g. the acidity (pH) and tension or partial pressure of CO2 or O2 in blood to determine the **respiratory** state of a patient. Provides a multiple event **sensor** which is easily mfd., shaped to avoid thrombogenicity and structurally sound to withstand intravascular placement.
 1/2
 FS CPI GMPI
 FA AB; GI; DCN
 MC CPI: A12-V03B; A12-V03C2; B04-B04D5; B04-C03D; B05-C04; B05-C08; B11-C08; B12-K04A; J04-C04

L141 ANSWER 35 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN
 AN 1991-283076 [39] WPIX
 DNN N1991-216498 DNC C1991-122595

TI **Gas sensing** element - comprises **sensing** compsn. in **polymer matrix** between glass disc and opaque, **gas** permeable film layer.

DC A89 B04 J04 P31 P42 S03

IN HACKER, T G; HOLODY, M Z; MAXWELL, T P; YAFUSO, M

PA (MINN) MINNESOTA MINING & MFG CO; (MINN) MINNESOTA MINING MFG CO

CYC 6

PI EP 448052 A 19910925 (199139)*

US 5175016	A	19921229 (199303)	10	G01N001-00
JP 05072202	A	19930323 (199316)	9	G01N033-49
EP 448052	A3	19920226 (199324)		
US 5284775	A	19940208 (199407)	9	G01N033-50
EP 448052	B1	19961218 (199704)	EN 11	G01N021-77 <--

R: DE FR GB IT

DE 69123619 E 19970130 (199710) G01N021-77 <--

ADT EP 448052 A EP 1991-104251 19910319; US 5175016 A US 1990-496560 19900320; JP 05072202 A JP 1991-54727 19910319; EP 448052 A3 EP 1991-104251 19910319; US 5284775 A Div ex US 1990-496560 19900320, US 1992-949771 19920921; EP 448052 B1 EP 1991-104251 19910319; DE 69123619 E DE 1991-623619 19910319, EP 1991-104251 19910319

FDT US 5284775 A Div ex US 5175016; DE 69123619 E Based on EP 448052

PRAI US 1990-496560 19900320

REP NoSR.Pub; 1.Jnl.Ref; EP 344313; JP 01314951; US 31879; US 4557900; US 4798738; US 4824789; US 4849172; US 4851195; WO 8805533

IC ICM G01N001-00; **G01N021-77**; G01N033-49; G01N033-50

ICS A61B005-14; B05D001-36; G01N021-31; **G01N021-64**

AB EP 448052 A UPAB: 19940715

Gas sensing element comprises a **gas sensing** compsn. (22) between a transparent **gas** impermeable solid disc (14) and an opaque, **gas** permeable film (21). The **gas sensing** compsn. comprises a **sensing** component in a **gas** and light permeable **polymer**. The element is sized to fit in a cavity (24) in a **sensor** holder (30).

Pref. the disc is made of glass and the film is pref. an opaque agent and a **polymer** such as a polyfluorohydrocarbon, a polyfluorocarbon, mixts. thereof or especially PTFE. Pref. the **sensing** compsn. is a **crosslinked** silicon **polymer** with the **sensing** component dissolved in an aqueous liquid and dispersed throughout.

USE/ADVANTAGE - The **sensor** is used for detecting CO2 or O2 amts. in blood. Different **sensing** elements can be used with the same hardware part. @(10pp Dwg.No.2/3)@ 2/3

FS CPI EPI GMPI

FA AB; GI; DCN

MC CPI: A12-V03B; A12-V03C2; B04-B04D5; B04-C03B; B04-C03D; B04-D02; B05-C04; B05-C08; B11-C08; B12-K04A; J04-C04

EPI: S03-E04A9; S03-E04D; S03-E14H1

ABEQ US 5175016 A UPAB: 19930928

A **gas** concn. **sensing** element is made by placing **sensing** compsn. precursor (22) between and in contact with a transparent **gas**-impermeable solid disc (14) and an opaque **gas**-permeable film (21), the composition including **sensing** component and **polymer** precursor, then reacting the precursor. The disc is pref. of glass and the film is of fluorocarbon **polymer**, partic. PTFE, and an opacifying agent.

The precursor pref. includes a **crosslinking** agent and the **sensing** component is dissolved in aq. liq. dispersed in the **polymer**, with hydroxyethyl cellulose to keep the liq. dispersed. The aq. liq. may have a pH of 6-8 and the element is for **sensing** CO2 in blood. Alternatively, the element is for **sensing** blood oxygen.

ADVANTAGE - Provides reliable and consistent determinations with reduced tendency to drift, and can be produced in less time and less expensively.

1/3

ABEQ US 5284775 A UPAB: 19940329

Sensing compsn. precursor comprises a dispersed aq. liq. contg dissolved **sensing** cpd., **polymer** precursor and a hydrophilic dispersing agent to maintain dispersed state. Dispersing agent comprises hydroxyalkyl cellulose(s).

Polymer precursor comprises vinyl-terminated dimethyl **siloxane**; **sensing** compsn precursor also includes a **crosslinking** agent; and **sensing** cpd comprises hydroxypyrene trisulphonic acid (derivs).

USE/ADVANTAGE - Used to **sense** concn. of CO₂ in blood. Cost of producing non-specification **sensing** element is reduced.

Dwg.3/3

ABEQ EP 448052 B UPAB: 19970122

A method for making a **gas sensing** element useful in **sensing** the concn. of the **gas** in a medium comprising (a) placing **sensing** compsn. precursor between and in contact with a transparent **gas** impermeable solid disc and an opaque **gas** permeable film oppositely disposed from the transparent **gas** impermeable solid disc, the **sensing** compsn. precursor comprising a **sensing** component and a **polymer** precursor, and thereafter (b) forming from the **sensing** compsn. precursor, a **sensing** compsn. including **gas** permeable and light permeable **polymeric** material and the **sensing** component, the forming including reacting the **polymer** precursor, the combination comprising at least a portion of the **sensing** compsn., the transparent, **gas** impermeable solid disc and at least a portion of the opaque, **gas** permeable film being referred to as a **gas sensing** element.

Dwg.3/3

L141 ANSWER 36 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1990-289818 [38] WPIX

DNN N1990-223059 DNC C1990-125094

TI Optical **sensor** of concentration of component in medium - in which reservoir supplied additional optical **indicator** to **sensor**.

DC A96 B04 J04 S03 S05 V07

IN HACKER, T G; HUI, H K; MAXWELL, T P; MILLER, W W; YAFUSO, M; YAN, C F
PA (MINN) MINNESOTA MINING & MFG CO

CYC 1

PI US 4954318 A 19900904 (199038)*

ADT US 4954318 A US 1987-91432 19870831

PRAI US 1987-91432 19870831

IC G01N021-77

AB US 4954318 A UPAB: 19930928

Optical **sensor** (18) includes an optical **indicator** which provides an optical signal which varies according to the concentration of a component in a medium, and a signal receiver device receives optical signal from the **sensor**. A supply device (16) positioned adjacent the optical **sensor**, provides additional optical **indicator** to the **sensor**.

Pref. device comprises a component permeable silicone **polymeric matrix** (18) which holds a **fluorescence** or absorbance **indicator** mounted on the end of an optical fibre (12).

USE/ADVANTAGE - In the measurement of the concentration of a specific component in a medium partic. in the measurement of **oxygen** concentration in blood. Optical **indicator** can be lost during mfr. and

use of the **sensor**. By providing a reservoir the **sensors** are more consistent and reliable over a period of time.

1/4

FS CPI EPI

FA AB; GI; DCN

MC CPI: A12-V03C2; B04-B04D5; B05-C04; B05-C08; B10-A07; B11-C07B2; B12-K04A; J04-B01

EPI: **S03-E04E**; S05-D01X; V07-X

L141 ANSWER 37 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1990-052730 [08] WPIX

DNN N1990-040634 DNC C1990-022788

TI Fibre-optic **sensor** for monitoring physiological analyte - has **indicator** molecule covalently bound to **polymer** fixed to fibre tip.

DC A14 A89 B04 J04 P31 P64 P81 S03 S05 V07

IN IYER, L M; LYON, K S; YIM, J B; LYER, L M

PA (ABBO) ABBOTT LAB

CYC 10

PI EP 352610 A 19900131 (199008)* EN 18

R: DE FR GB IT

AU 8938262 A 19900125 (199010)

US 4925268 A 19900515 (199024)

JP 02161338 A 19900621 (199031)

US 5000901 A 19910319 (199114)

US 5127077 A 19920630 (199229) 13 G02B006-00

AU 633498 B 19930204 (199312) G01N033-50

CA 1329017 C 19940503 (199423) A61B005-00

ADT EP 352610 A EP 1989-113197 19890719; US 4925268 A US 1988-224620 19880725;

JP 02161338 A JP 1989-192464 19890725; US 5000901 A US 1990-491336

19900309; US 5127077 A Div ex US 1988-224620 19880725, Cont of US

1990-491336 19900309, US 1990-629988 19901218; AU 633498 B AU 1989-38262

19890719; CA 1329017 C CA 1989-606579 19890725

FDT US 5127077 A Div ex US 4925268, Cont of US 5000901; AU 633498 B Previous Publ. AU 8938262

PRAI US 1988-224620 19880725

REP 2.Jnl.Ref; A3...9048; DE 2705370; DE 3001669; EP 205232; No-SR.Pub; US 4200110; US 4434249; WO 8603004; WO 8700920

IC ICM G01N033-50

ICS A61B005-00; B28B001-14; G01N021-75; **G01N021-77**; G01N033-84; G02B006-02

AB EP 352610 A UPAB: 19930928

Sensor for monitoring physiological analyte concentration comprises an analyte-permeable **matrix** placed in the light path defined by the axial core at one end of an optical fibre segment. The **matrix** comprises an **indicator** mol. covalently linked to a **polymer**, the **indicator** being capable of responding to the analyte in an optically detectable manner, and the **polymer** being a **copolymer** of (i) methyl methacrylate (MMA)/methacrylamidopropyl trimethylammonium chloride (MAPTAC), (ii) N-vinylpyrrolidone/p-aminostyrene, (iii) MMA/hydroxymethyl methacrylate, (iv) MMA/N-vinylpyrrolidone, or (v) MMA/acrylic acid. Multi-variable probe comprises a number of the **sensors**, the analyte-permeable **matrices** of the **sensors** being disposed in coterminal USE/ADVANTAGE - Useful for measuring blood pH, PO2 and/or PCO2. Drift-free performance is obtd. with analyte-permeable **matrices** of thickness below 70 microns. The **sensor** may be mass-produced.

3/4

FS CPI EPI GMPI

FA AB; GI; DCN

MC CPI: A12-L03A; A12-L04; A12-V03C2; B04-B04D5; B04-C03A; B04-C03B; B05-C04; B05-C08; B06-A02; B06-A03; B06-C; B11-C07B2; B12-K04A2; J04-C04

EPI: **S03-E04E**; S03-E14H; S05-C; V07-X

ABEQ US 4925268 A UPAB: 19930928

Fibre optic **sensor** comprises an **indicator gp.** covalently linked to a **polymer matrix**, e.g. methyl methacrylate/methacrylamidopropyl trimethylammonium chloride, N-vinylpyrrolidone/4-aminostyrene, methyl methacrylate/hydroxy-methyl methacrylate, methyl methacrylate/N-vinylpyrrolidone and methyl methacrylate/acrylic acid **copolymers**, which are permeable to aq. analytes, mounted in the light path of an optical fibre segment. A specific analyte diffuses into the **polymer matrix** and reacts with the **indicator gp.**, giving a change in optical properties of the system which is related to the concn. of the analyte.

USE - The prods. are microelectrodes for monitoring physiological fluids, opt. in vivo for rapid clinical analysis and diagnosis.

ABEQ US 5000901 A UPAB: 19930928

Mfg. a fibre optic **sensor** comprises (a) casting a **polymer** film of uniform thickness which is permeable to an analyte in soln., (b) cutting the film to produce a disc shaped **indicator matrix** of uniform thickness and (c) affixing the **indicator matrix** to 1 end of an optical fibre segment. The **polymer** film comprises a covalently linked or admixed **indicator** molecule which can respond to the analyte in an optically detectable manner.

The **polymer** pref. comprises e.g. methyl methacrylate methacrylamido propyltrimethylammonium chloride. The **polymer** film is cast on a thin film of reflective material comprising Au, TiO₂, ZnO or BaSO₄.

USE/ADVANTAGE - Drift free fibre optic **sensor** is used for monitoring physiological analyte concn. (claimed).

ABEQ US 5127077 A UPAB: 19930928

Optical fibre **sensor** for monitoring physiological analytes in soln. comprises a **matrix** contg. an **indicator** bonded to or mixed with a **polymer** carrier, that is permeable to the analyte and mounted in the light path along the axis of the fibre core, such that when analyte permeates into the **matrix**, the reaction with the **indicator** can be measured by the change in an optical property of the system.

USE - The prods. are suitable for the rapid determination of pH and dissolved **gases** in blood.

4/4

L141 ANSWER 38 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1989-332544 [46] WPIX

DNN N1990-028716 DNC C1990-016275

TI Optical **sensor** for determ. of properties of liquid or **gaseous** sample - with carrier particles containing immobilised **fluorescent indicator** fixed partly in bonding layer on **polymer** support.

DC A89 J04 P81 S03

IN LEINER, M; WEISS, L; WOLFBEIS, O S; LEINER, M J

PA (AVLV) AVL AG; (AVLV) AVL LIST GMBH; (AVLV) AVL MEDICAL INSTR AG; (AVLL-N) AVL LIST GMBH

CYC 8

PI AT 8801974 A 19891015 (198946)* 6

EP 354204 A 19900207 (199006)B GE

R: DE FR GB

DK 8903763 A 19900205 (199015)

JP 02167448 A 19900627 (199032)

US 5114676 A 19920519 (199223)

JP 06082100 B2 19941019 (199440) 5 G01N021-00

EP 354204 B1 19950405 (199518) GE 9 G01N021-78 <--

R: DE FR GB

DE 58909153 G 19950511 (199524) G01N021-64 <--

ADT EP 354204 A EP 1989-890202 19890731; JP 02167448 A JP 1989-203709 19890804; US 5114676 A US 1989-386151 19890728; JP 06082100 B2 JP

1989-203709 19890804; EP 354204 B1 EP 1989-890202 19890731; DE 58909153 G
 DE 1989-509153 19890731, EP 1989-890202 19890731
 FDT JP 06082100 B2 Based on JP 02167448; DE 58909153 G Based on EP 354204
 PRAI AT 1988-1974 19880804
 REP A3...9127; DE 3148830; DE 3343636; No-SR.Pub
 IC C12M001-34; C12M001-40; **G01N021-64**; G02B006-02
 ICM **G01N021-78**
 ICS C12M001-34; C12M001-40; **G01N021-64**; **G01N021-77**;
 G01N021-80; **G01N031-22**; G02B006-02
 AB AT 8801974 A UPAB: 19950425
 In an optical **sensor** for determin. of at least one parameter of a
 liquid or **gaseous** sample, with a support layer carrier particles
 with an immobilised **fluorescent indicator**, the support
 is a **polymer** film (1), transparent to the initiating and
 radiation, the single carrier particles (3) with the immobilised
fluorescent indicator are fixed with only a part (4) of
 their surface in a layer (2), bonded to the support, of a
 thermoplastically deformable material which assumes duroplastic properties
 after the carrier particles have been pressed into it, the other part (5)
 of their surface being immersed in an optically transparent layer (6) of
 hydrogel which hooks onto the carrier particles and **coats** the
 bonded layer (2).
 USE/ADVANTAGE - The **sensors** can be made simply and in large
 numbers, have large effective surface, carry the **fluorescent**
indicator in a quasi-aqueous solution instead of in a hydrophobic
 material, and can react to varying parameters with a short response time.
 The optical insulation forms an integral part of the **sensor**
 layer. Applns. of the **sensor** include determin. of pH, or partial
 pressure of **CO2**, and of **O2**. The **sensor** can
 be attached to the end of an optical conductor. (First major country
 equivalent to AT8801974-A)
 2/3
 Dwg. 2/3
 FS CPI EPI GMPI
 FA AB; GI
 MC CPI: A12-L03; A12-L04; J04-C
 EPI: S03-E04
 ABEQ EP 354204 A UPAB: 19930923
 In an optical **sensor** for determin. of at least one parameter of a
 liq. or **gaseous** sample, with a support layer carrier particles
 with an immobilised **fluorescent indicator**, the support
 is a **polymer** film (1), transparent to the initiating and
 radiation, the single carrier particles (3) with the immobilised
fluorescent indicator are fixed with only a part (4) of
 their surface in a layer (2), bonded to the support, of a
 thermoplastically deformable material which assumes duroplastic properties
 after the carrier particles have been pressed into it, the other part (5)
 of their surface being immersed in an optically transparent layer (6) of
 hydrogel which hooks onto the carrier particles and **coats** the
 bonded layer (2).
 USE/ADVANTAGE - The **sensors** can be made simply and in large
 numbers, have large effective surface, carry the **fluorescent**
indicator in a quasi-aq. soln. instead of in a hydrophobic
 material, and can react to varying parameters with a short response time.
 The optical insulation forms an integral part of the **sensor**
 layer. Applns. of the **sensor** include determin. of pH, or partial
 pressure of **CO2**, and of **O2**. The **sensor** can
 be attached to the end of an optical conductor. (First major country
 equivalent to AT8801974-A)
 2/3
 ABEQ US 5114676 A UPAB: 19930923
 Optical thin-film **sensor** comprises (a) a **polymer**
 support film which is transparent to excitation and emission radiation;

(b) a thin transparent layer of thermoplastic material adhered to this;
 (c) an optically transparent hydrogel layer covering (b); and (d) carrier particles contg. an immobilised **fluorescent indicator**.

Part of (d) is bonded to (b), and has thermosetting properties after being pressed in. Another part of (d) extends into (c) and mechanically anchors it.

USE - For determining 1 or more parameter in a liq. or **gaseous** sample.

ABEQ EP 354204 B UPAB: 19950518

An optical **sensor** for determining one or more parameters in a liquid or **gaseous** sample, comprising a carrier layer which is provided with carrier particles and a **fluorescent** indicator immobilized thereon, wherein the carrier layer is configured as a **polymer** foil transparent to both excitation and emission radiation, and wherein the individual carrier particles (3;9) carrying the **fluorescent indicator** in immobilized form are attached with only part (4) of their surface to a layer (2) adhering to the **polymer** foil (1), which layer (2) is formed by applying a thermoplastic material including a solvent, the carrier particles being mechanically attached by the application of heat and pressure after drying of the solvent, and which assumes thermosetting properties after the carrier particles (3;9) have been pressed in, and wherein the individual carrier particles (3;9) extend with the other part of their surface into an optically transparent hydrogel layer (6) covering the adhesive layer (2), in which hydrogel layer (6) the carrier particles (3;9) are anchored mechanically.

Dwg.1-3/3

L141 ANSWER 39 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1989-272035 [38] WPIX

CR 1990-375982 [50]; 1991-275602 [38]; 1992-398027 [48]; 1993-196242 [24];
 1996-259062 [26]; 1997-043154 [04]; 1997-404727 [38]; 1998-008901 [01];
 1999-105121 [09]

DNC C1989-120407

TI Detection of microorganisms in clinical specimens - uses growth medium and sealed container with **sensing** and **indicators** to detect microorganisms.

DC A89 A96 B04 D16

IN CALANDRA, M J; DIGUISEPPI, J L; DRISCOLL, R C; THORPE, T C; TURNER, J E

PA (ALKU) AKZO NV; (ALKU) AKZO NOBEL FASER AG; (ALKU) AKZO NOBEL NV

CYC 20

PI EP 333253 A 19890920 (198938)* EN 11

R: AT BE CH DE ES FR GB GR IT LI NL SE

AU 8931288 A 19890921 (198946)

DK 8901238 A 19890916 (198948)

JP 02016965 A 19900119 (199009)

ZA 8901788 A 19900328 (199017)

US 4945060 A 19900731 (199033) 9

ES 2031807 T1 19930101 (199305) C12M001-34

EP 333253 B1 19950809 (199536) EN 14 C12M001-34

R: AT BE CH DE ES FR GB GR IT LI NL SE

DE 68923720 E 19950914 (199542) C12M001-34

ES 2031807 T3 19951216 (199606) C12M001-34

IE 67634 B 19960417 (199628) C12M001-34

CA 1339512 C 19971028 (199804) C12Q001-04

JP 2862556 B2 19990303 (199914) 8 C12M001-34

KR 9703150 B1 19970314 (199936) C12Q001-00

ADT EP 333253 A EP 1989-200554 19890306; JP 02016965 A JP 1989-61990 19890314;
 ZA 8901788 A ZA 1989-178 19890808; US 4945060 A US 1988-168291 19880315;
 ES 2031807 T1 EP 1989-200554 19890306; EP 333253 B1 EP 1989-200554
 19890306; DE 68923720 E DE 1989-623720 19890306, EP 1989-200554 19890306;
 ES 2031807 T3 EP 1989-200554 19890306; IE 67634 B IE 1989-746 19890307; CA
 1339512 C CA 1989-593584 19890314; JP 2862556 B2 JP 1989-61990 19890314;

KR 9703150 B1 KR 1989-3105 19890314

FDT ES 2031807 T1 Based on EP 333253; DE 68923720 E Based on EP 333253; ES 2031807 T3 Based on EP 333253; JP 2862556 B2 Previous Publ. JP 02016965

PRAI US 1988-168291 19880315

REP 1.Jnl.Ref; A3...9003; AU 472420; FR 2603684; JP 57207861; No-SR.Pub; US 2880070; 2.Jnl.Ref; US 4456380

IC ICM C12M001-34; C12Q001-00; C12Q001-04
ICS C12Q001-06; C12Q001-22; **G01N021-77**; G01N033-84

AB EP 333253 A UPAB: 19990603
A device for detecting microorganisms in a specimen comprises a sealable sterilizable vessel in which a specimen may be cultured with a sterile culture medium, a transparent section in the wall of the vessel with a **sensor** attached to the internal surface of the vessel in the region of the transparent section. The **sensor** has an **indicator** and changes in the **indicator** resulting from pH change or change in CO₂ concentration in the medium are detected from outside the vessel.
USE/ADVANTAGE - A device and apparatus for continuously monitoring changes in pH or CO₂ in a clinical specimen using a growth medium and sealed container without entering the container after the sample is prepared and the container sealed.
Dwg.0/4

FS CPI

FA AB; DCN

MC CPI: A12-L04; A12-V03; A12-W05; A12-W11L; B04-B02B; B05-C04; B11-C07B2; B11-C08; B12-K04A4; D05-H04; D05-H05; D05-H06; D05-H09

ABEQ US 4945060 A UPAB: 19930923
Device for monitoring biological activity comprises a sealed, sterilised container contg. a biological species in a nutrient medium contg. a non-**fluorescent** indicaor, in which one or more **sensors** are immersed; at least part of the container is transparent, so that changes in **colour** or appearance can be monitored by reflectance, turbidity, absorbence or other optical methods; and the pH of the medium, CO₂ and O₂ contents, etc. can be monitored with corresp. ion specific electrodes in the medium.
USE - The process is applicable to the assessment of microbial contamination in a wide range of clinical samples, food prods, etc. @

ABEQ EP 333253 B UPAB: 19950918
A device for detecting microorganisms in a specimen comprising a sealable, sterilisable, specimen container, having an internal chamber in which a specimen may be cultured with a sterile culture medium to detect microbial contamination in the specimen and having at least one transparent section in the wall of said container, and a **sensor** means affixed to the internal surface of the wall of said container in the region of the transparent section, whereby changes in the appearance of the **sensor** means can be detected from the exterior of said container through said transparent section, said **sensor** means comprising an immobilised **indicator** medium, the **indicator** medium being selected for its ability to exhibit a detectable change when exposed to products of an organism's metabolic activity, said **indicator** medium being immobilised by bonding the **indicator** to a support medium or encapsulating the **indicator** within a **polymer matrix**.
Dwg.0/4

L141 ANSWER 40 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1989-241329 [33] WPIX

DNN N1989-183937 DNC C1989-107502

TI Fibre optic chemical **sensor** production - by contacting optical fibre waveguide with a **polymer** compsn., **photocrosslinking** the compsn. and absorbing a **dye**.

DC A14 A89 L03 P81 S03 V07

IN BLAYLOCK, M E

PA (CRDC) CORDIS CORP

CYC 1

PI US 4842783 A 19890627 (198933)* 6

ADT US 4842783 A US 1987-92645 19870903

PRAI US 1987-92645 19870903

IC B29D011-00; G02B006-02

AB US 4842783 A UPAB: 19930923

A method for making a fibre optic chemical **sensor** for monitoring at least one parameter of a fluid comprises (a) preparing a **photocrosslinkable** gel-forming **polymer** compsn. including a **photopolymer** component that **crosslinks** when subjected to actinic radiation and a solvent within which the **photopolymer** component is soluble; (b) contacting the **photocrosslinkable polymer** compsn. with a portion of an optical fibre waveguide so that it adheres, (c) subjecting the **photocrosslinkable polymer** compsn. to actinic radiation while the compsn. is adhered to the portion of the optical fibre waveguide to **photocrosslink** the compsn. into a **photocrosslinked polymeric** gel member and (d) absorbing a **dye** component into the gel member, the **dye** component being responsive to a parameter of the fluid to be monitored.

The **photopolymer** component may be a vinyl-type base **polymer** component, e.g., of the vinyl aromatic type and the base **polymer** may be modified by covalent attachment of e.g. vinyl gps. or acrylic gps. The **photocrosslinkable** compsn. may include vinyl-containing or acrylic-containing monomers or **polymers** and the gel member may be swellable to at least 1000 times its dry volume The gel member may have electrically charged moieties and the **dye** component oppositely charged.

USE/ADVANTAGE - The chemical **sensors** can be used for monitoring, detecting and/or measuring parameters such as pH, **oxygen** concentration, **CO2** concentration, metal ion concentration and glucose concentration at locations remote from detection instrumentation. Using the method it is possible to rapidly and efficiently provide a fibre optic chemical **sensor** having a **polymeric** gel that suitably positions the **dye** material.

2/4

FS CPI EPI GMPI

FA AB; GI

MC CPI: A04-C01; A11-C02B; A12-L03A; L03-D04; L03-G02

EPI: S03-E03X; **S03-E04E**; V07-X

L141 ANSWER 41 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1988-272930 [39] WPIX

DNN N1988-207300 DNC C1988-121463

TI Chemical **sensor** - with reagent on porous adsorbent unitary support adjacent to optical fibres.

DC J04 S03

IN BOISDE, G; PEREZ, J J; PEREZ, J

PA (COMS) COMMISSARIAT ENERGIE ATOMIQUE

CYC 7

PI EP 284513 A 19880928 (198839)* FR 9

R: CH DE FR GB IT LI

FR 2613074 A 19880930 (198846)

US 4907037 A 19900306 (199016)

EP 284513 B1 19940601 (199421) FR 12 G01N021-75

R: CH DE FR GB IT LI

DE 3889757 G 19940707 (199427) G01N021-75

ADT EP 284513 A EP 1988-400719 19880324; US 4907037 A US 1988-169958 19880318;

EP 284513 B1 EP 1988-400719 19880324; DE 3889757 G DE 1988-3889757

19880324, EP 1988-400719 19880324

FDT DE 3889757 G Based on EP 284513

PRAI FR 1987-4299 19870327

REP 2.Jnl.Ref; A3...9018; EP 72627; No-Sr.Pub; US 4295470; US 4577109;
02Jnl.Ref
IC G01N021-75; G01N033-52
ICM G01N021-75
ICS **G01N021-64**; G01N033-52
AB EP 284513 A UPAB: 19930923
A chemical **sensor** has a reagent on a porous adsorbent unitary support immersed in a fluid to be tested, an optical fibre directing light onto the support, and another optical fibre collecting light from the support. The support is pref. of porous **silica** or synthetic resin, and may be of polyacrylamide or styrene-divinylbenzene **copolymer**. The reagent may be thymol blue, **fluorescein**, bromophenol blue or phenol red.

USE/ADVANTAGE - For measuring pH or **oxygen** or **carbon dioxide** concentrations in medicine or agriculture. The reagent does not have to be protected by a membrane.
1/4

FS CPI EPI

FA AB; GI

MC CPI: J04-C04

EPI: S03-E04D; **S03-E04E**; S03-E14A

ABEQ US 4907037 A UPAB: 19930923

Active chemical transducer comprises an emitting optical fibre (2) and several receiving optical fibres (4) round the emitting fibre, in a cylindrical sheath (8) e.g. of stainless steel. A ball (10) e.g. of **copolymer**, faces the planar ends of the fibres, having an appropriate reagent, such as a **coloured indicator**, linked by covalence to the **copolymer**. The ball is held by spacers (12, 14) and the sheath has windows (18) so that the ball is in direct contact with the soln. to be studied.

ADVANTAGE - No membrane is used and transducer can be sterilised a number of times.

ABEQ EP 284513 B UPAB: 19940715

Active chemical transducer with optical fibres for measuring a given characteristics of a fluid medium, said transducer having at least one assembly with a reagent appropriate for said measurement and intended to interact with the fluid medium, means (10,52) for supporting the reagent, an optical fibre (2,46), called the emitting fibre and used for transmitting light in the direction of the support means (10,52) and at least one other optical fibre (4), called the receiving fibre, which recovers at least part of the light from the support means (10,52), when the latter receive the light from the emitting fibre (2,46), the transducer being characterised in that the support means have a single, completely porous and adsorbing element (10,52), to which is fixed the reagent and which is positioned facing the emitting fibre (2, 46) and each receiving fibre (4), said element (10,52) being in direct contact, by the quasi-totality of its outer surface, with the fluid medium when the transducer is immersed in the latter, so that the element (10,52) has no confinement membrane.

Dwg.1/4

L141 ANSWER 42 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1988-008549 [02] WPIX

DNN N1988-006085 DNC C1988-003780

TI **Sensor** system using fluorometric decay measurements - used for measuring **oxygen** partial pressure, pH, **carbon di oxide** or temperature in an organ or a body.

DC A89 B04 J04 P31 S03 S05 V07

PA (SCHU-I) SCHULZE J E; (SHUL-I) SHULZE J E

CYC 6

PI EP 252578 A 19880113 (198802)* EN 15

R: DE FR GB IT NL

US 4895156 A 19900123 (199011) 13

ADT EP 252578 A EP 1987-303362 19870415; US 4895156 A US 1986-881139 19860702
 PRAI US 1986-881139 19860702
 REP No-SR.Pub
 IC A61B005-00; G01K011-20; **G01N021-64**
 AB EP 252578 A UPAB: 19930923

A measurement system for analysis of fluid components inside a body comprises (a) pulse generator for generating a member of time related pulses, (b) a fibre-optic equipped catheter having at least its distal portion located in an organ or a body in which a fluid component concentration

is

to be measured, the catheter having at least one fluorometric **sensor** deployed to **sense** fluid concentration in communication with one or more fibre optic light pipes within the catheter, the fluorometric **sensor** producing a **fluorescent** output in response to a light input, the **fluorescent** output having a lifetime **indicative** of the fluid concentration in the environment of the fluorometric **sensor**, (c) a light source responsive to one or more of the pulses to generate pulses of output light and for directing a portion of the light into an input of the fibre-optic light pipe-equipped catheter, (d) a **photosensor** positioned outside the body for **sensing** the **fluorescent** output of the fluorometric **sensor** conveyed by one of the fibre optic light pipes and (e) an analyser for analysing the **fluorescent** output with respect to time to obtain a lifetime signal related to the lifetime of the fluorometric **sensor**.

Pref. the fluorometric **sensor** is a **fluorophor/polymer matrix** in which the **polymer** is e.g. silicon rubber, a **copolymer** of silicon and polycarbonate, a **copolymer** of silicon and polystyrene or an ion exchange resin.

USE - The **sensor** system is used for measuring **oxygen** partial pressure, pH, CO₂ or temperature in an organ or a body.

1/5

FS CPI EPI GMPI

FA AB; DCN

MC CPI: A12-V03C2; B04-C03B; B04-C03D; B05-C04; B05-C08; **B11-C07B3**;
 B12-K04A; J04-B01

EPI: S03-B01X; S03-E04D; S05-D01X; V07-N

ABEQ US 4895156 A UPAB: 19930923

System for measuring fluid component concn. in a body comprises a fibre optic catheter with a fluorometric **sensor** having a **fluorescent** output with decay **indicative** of concn. The probe is excited by a pulsed light source, and the catheter outputs to a distal end **photosensor**, the output of which is sampled to provide decay signals to an analyser obtaining a lifetime signal related to concn. A processor visually **indicates** concn. using the lifetime signal and the expression $T_0/T = 1 + K_g T_0(Q)$ where T_0 is lifetime in absence of component, T is measured lifetime in presence of component concn. (Q), and K_g is bimolecular quenching factor. The values of T_0 and K_g are compensatingly adjusted w.r.t. measured temp. The **sensor** pref. comprises tris(4,7-diphenyl-1,10-phenanthroline) RuII complex ion or **fluorescein** amine in silicone rubber, **copolymer** of silicone with polycarbonate or polystyrene, or an ion-exchange resin.

USE/ADVANTAGE - Esp. for measuring pO₂, pH or CO₂, is relatively inexpensive and gives improved results.

0

L141 ANSWER 43 OF 43 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1987-307035 [44] WPIX

DNN N1987-229627 DNC C1987-130813

TI **Sensor** for determ. of dissolved substance in aqueous medium - comprises optical fibre organic **polymer** with **fluorescent** organic substituents covalently bonded through ester or amide linkages.

DC A14 A89 B04 J04 P31 P83 S03
 IN MATTHEUS, R S; RHUM, D; MATTHEWS, R S
 PA (PFIZ) PFIZER HOSPITAL PROD GROUP INC; (HOWN) HOWMEDICA INC; (HOWM-N) HOWMEDICA INC
 CYC 21
 PI AU 8768718 A 19870917 (198744)* 49
 JP 62191740 A 19870822 (198739)
 EP 244929 A 19871111 (198745) EN
 R: AT BE CH DE ES FR GB GR IT LI LU NL SE
 DK 8700703 A 19870814 (198748)
 BR 8700677 A 19871215 (198804)
 ZA 8701023 A 19880815 (198844)
 JP 02025138 B 19900531 (199026)
 US 5019350 A 19910528 (199124)
 CA 1288029 C 19910827 (199139)
 EP 244929 B1 19940420 (199416) EN 25 G01N021-64 <--
 R: AT BE CH DE ES FR GB GR IT LI LU NL SE
 DE 3789631 G 19940526 (199422) G01N021-64 <--
 ES 2062978 T3 19950101 (199508) G01N021-64 <--
 ADT AU 8768718 A AU 1987-68718 19870212; EP 244929 A EP 1987-301237 19870212;
 ZA 8701023 A ZA 1987-1023 19870212; JP 02025138 B JP 1987-31303 19870213;
 US 5019350 A US 1986-829350 19860213; EP 244929 B1 EP 1987-301237
 19870212; DE 3789631 G DE 1987-3789631 19870212, EP 1987-301237 19870212;
 ES 2062978 T3 EP 1987-301237 19870212
 FDT DE 3789631 G Based on EP 244929; ES 2062978 T3 Based on EP 244929
 PRAI US 1986-829350 19860213
 REP A3...9009; AT 379688; DE 3001669; EP 105870; EP 53937; EP 99266;
 No-SR.Pub; US 3941750
 IC A61B005-00; C08J000-00; C08L000-00; G01N021-78;
 G01N031-22; G01N033-52; G03C000-00
 ICM G01N021-64
 ICS A61B005-00; C08J000-00; C08L000-00; G01N021-78;
 G01N031-22; G01N033-52; G01N033-84; G03C000-00
 AB AU 8768718 A UPAB: 19940622
 (1) **Sensor** for determin. of the concn. of a dissolved substance
 (I) in an aqueous medium comprises an optical fibre having at the distal end
 an adherent water-insol. organic **polymer** having a plurality of
fluorescent organic substituents covalently bound to the
polymer through ester or amide linkages. (2) **Fluorescent**
polymeric indicator for determin. of the concentration of (I) in
 an aqueous medium comprises an organic **polymer** having a plurality of
fluorescent organic substituents covalently attached to it through
 ester or amide linkages.
 USE/ADVANTAGE - With the **sensor** the **polymer**
indicator is more stable and is not readily leached from or washed
 away by the aqueous test medium containing (I). The medium is especially a
 body fluid
 such as blood and (I) is O2 or CO2, and the pH may
 also be measured at the same time. The **sensor** is
sensitive, has a short response time and bio-inert as well as
 stable.
 Dwg.0/0
 FS CPI EPI GMPI
 FA AB; DCN
 MC CPI: A09-A02; A10-E07; A10-E17; A12-V03C2; B04-B04D5; B04-C03B; B05-C04;
 B05-C08; B06-A01; B08-C01; B11-C07B3; B12-K04; J04-B01;
 J04-C04
 EPI: S03-E04D; S03-E04E; S03-E09E; S03-E14H
 ABEQ US 5019350 A UPAB: 19930922
Sensors for determining the concn. of dissolved substances in
 aq. media comprises an optical fibre which has an adherent,
 water-insoluble, stable, rapid response **fluorescent**
polymeric indicator (I) bound to its distal end.

(I) comprises an organic **polymer** (II) covalently bonded through ester or amide linkages to **fluorescent** organic substituents. (III) which may be the same or different. (II) has OH or NH₂ gps. depending from the chain and (III) has gps. which can form ester or amide linkages with them while not interfering with the **fluorescent** properties. (II) is pref. a hydroxyethyl methacrylate **polymer** or its **copolymer** with methyl methacrylate or is polyvinyl alcohol. (III) is pref. 4-(1-pyrene)-butanoic acid or 4-umbelliferonyl acetic acid.

USE/ADVANTAGE - In measuring O₂ and CO₂ concn. in blood. The **indicator** is not leached from the device.

ABEQ EP 244929 B UPAB: 19940608

A **sensor** for the determination of the concentration of a dissolved substance in an aqueous medium comprising an optical fibre having bonded or adhered to one end thereof a stable, rapid-response **fluorescent polymeric indicator**, the **indicator** comprising an organic **polymer** having a plurality of **fluorescent** organic substituents, which may be the same or different, covalently bonded to said **polymer** through ester or amide linkages.
Dwg.0/0

=> d his

(FILE 'HOME' ENTERED AT 07:08:42 ON 29 JUN 2004)
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 07:09:00 ON 29 JUN 2004

```
L1      1 S US20030133123/PN OR US2002-041661#/AP,PRN
          E YEH M/AU
L2      49 S E3,E6
          E YEH MING/AU
L3      30 S E3,E19-E21
L4      1 S E42
          E BECTON/PA,CS
L5      1107 S (BECTON?(L)DICKINSON?)/PA,CS
          E SENSOR/CT
L6      25145 S E13
L7      11473 S E14-E49
          E E13+ALL
L8      36723 S E5,E4,E12
L9      74035 S E4+OLD,NT,PFT
          E SENSOR/CW
L10     48135 S E5
L11     74598 S L6-L10
L12     152052 S ?SENSOR OR ?SENSORS
L13     162791 S L11,L12
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FILE 'REGISTRY' ENTERED AT 07:17:35 ON 29 JUN 2004

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L14     1 S OXYGEN/CN
L15     1 S CARBON DIOXIDE/CN
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FILE 'HCAPLUS' ENTERED AT 07:17:52 ON 29 JUN 2004

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L16     16209 S (L14 OR O2 OR OXYGEN) AND L13
L17     1468 S (L15 OR CO2 OR CARBON DIOXIDE) AND L16
          E GAS/CT
          E E6+ALL
L18     11972 S L13 AND E2+NT
          E E6+ALL
L19     497 S L13 AND E4+NT(L) (ANT OR ANST)/RL
L20     13370 S L17,L18,L19
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L21 20 S L20 AND ACID(S)BASE(S) INDICAT?
E ACID BASE/CT
E ACID-BASE/CT
E E13+ALL
L22 13 S L20 AND E4,E3+NT
E E2+ALL
L23 56 S L20 AND E2+OLD,NT,PFT
L24 62 S L21-L23
E CHROMOPHORE/CT
L25 22 S L20 AND E9,E7,E4+OLD,NT,PFT
E DYE/CT
L26 57 S L20 AND E64+OLD,NT,PFT
E FLUOROPHORE/CT
E E4+ALL
E E2+ALL
L27 53 S L20 AND E5,E4+NT

FILE 'REGISTRY' ENTERED AT 07:25:48 ON 29 JUN 2004

L28 1 S 76-59-5
L29 1 S 1733-12-6
L30 1 S 21329-70-4
L31 1 S 63373-04-6
L32 13 S 63373-04-6/CRN
L33 1 S 36536-22-8
L34 1 S 48221-03-0
L35 26 S 48221-03-0/CRN

FILE 'HCAPLUS' ENTERED AT 07:28:09 ON 29 JUN 2004

L36 43 S L28-L35 AND L20
L37 175 S L24-L27,L36
L38 19 S L37 AND ?POLYMER?(L)MATRIX
L39 31 S L37 AND POLYMER?/CW
L40 42 S L38,L39
L41 0 S L37 AND (PREMIX? OR PRE MIX?)
L42 12 S L37 AND (?CROSSLINK? OR ?CROSS LINK?)
L43 48 S L40,L42

FILE 'REGISTRY' ENTERED AT 07:31:01 ON 29 JUN 2004

L44 1 S 7631-86-9
L45 1 S 7440-06-4

FILE 'HCAPLUS' ENTERED AT 07:31:04 ON 29 JUN 2004

L46 707 S L20 AND (L44 OR SIO2 OR SILICA OR SILICON DIOXIDE OR SILICON
L47 50 S L46 AND ?POWD?
L48 1982 S L20 AND (L45 OR PT OR ?PLATINUM?)
L49 12 S L48 AND L37
L50 27 S L46 AND L37
L51 3 S L47 AND L37
L52 69 S L43,L49-L51
L53 67 S L52 AND (PD<=20020110 OR PRD<=20020110 OR AD<=20020110)
L54 36 S L2-L5 AND L13
L55 5 S L54 AND L20
L56 31 S L54 NOT L55
SEL DN AN 14
L57 1 S L56 AND E1-E3
L58 349 S L20 AND (?SILOXANE? OR ?SILANE?)
E POLYSILOXANE/CT
E POLYSILOXANES/CT
L59 91 S E3 AND L20
E SILOXANE/CT
E SILOXANES/CT
L60 221 S (E3+OLD,NT,PFT OR E4+OLD,NT,PFT OR E8) AND L20
L61 350 S L58-L60

L62 0 S CYCLIC(L) VINYL METHYL(L) DIMETHYL(L) SILOXANE
L63 0 S CYCLIC(L) VINYL METHYL(L) DIMETHYLSILOXANE
L64 83 S ?VINYL METHYL? (L) ?DIMETHYLSILOXAN?
E CYCLOSILOXANE/CT
E E29+ALL
L65 7131 S E7+NT
L66 4 S L20 AND L65
L67 3 S ?VINYL METHYLDIMETHYLSILOX?
SEL RN

FILE 'REGISTRY' ENTERED AT 07:57:30 ON 29 JUN 2004

L68 34 S E1-E34
L69 13 S L68 AND SI/ELS
L70 1 S L69 AND C3H8O2SI
L71 2 S 9016-00-6 OR 31900-57-9
L72 69684 S SI/ELS AND PMS/CI

FILE 'HCAPLUS' ENTERED AT 07:59:37 ON 29 JUN 2004

L73 49 S L70,L71 AND L20
L74 353 S L61,L66,L73
SEL RN L37
DEL SEL

FILE 'REGISTRY' ENTERED AT 08:00:50 ON 29 JUN 2004

FILE 'HCAPLUS' ENTERED AT 08:00:50 ON 29 JUN 2004

SET SMARTSELECT ON
L75 SEL L37 1- RN : 1134 TERMS
SET SMARTSELECT OFF

FILE 'REGISTRY' ENTERED AT 08:00:54 ON 29 JUN 2004

L76 1134 S L75
L77 16 S L76 AND L72
L78 53 S L76 AND SI/ELS
L79 53 S L77,L78
L80 1 S L79 AND C8H18OSI2

FILE 'HCAPLUS' ENTERED AT 08:03:42 ON 29 JUN 2004

L81 1 S L80 AND L20
L82 20 S L73 AND (SENSOR ARRAY OR LASER OR BINARY OR MATRIX OR SENSING
L83 4 S L82 AND 1ST AND 2ND
SEL DN AN L82 18
L84 1 S L82 AND E1-E3
L85 26 S L52 AND L61,L64-L67,L73-L74
L86 24 S L85 NOT L82
SEL DN AN L86 3 4 7 8 12-14 16 20-22 24
L87 12 S L86 NOT E4-E39
L88 19 S L1,L57,L81,L83,L84,L87
L89 19 S L88 AND L1-L13,L16-L27,L36-L43,L46-L67,L73-L74,L81-L87
L90 19 S L89 AND (?SENS? OR GAS? OR O OR O2 OR OXYGEN OR CO2 OR CARBON
L91 9 S L90 AND ?FLUORES?
L92 19 S L90,L91

FILE 'HCAPLUS' ENTERED AT 08:28:09 ON 29 JUN 2004

L93 14 S L92 AND (L14 OR L15)
L94 19 S L92,L93

FILE 'HCAPLUS' ENTERED AT 08:29:19 ON 29 JUN 2004

FILE 'WPIX' ENTERED AT 08:29:40 ON 29 JUN 2004

L95 1 S L1
L96 479310 S ?SENSOR?/BIX
L97 3611 S A12-L04B/MC

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L98      481670 S L96,L97
L99      3237 S L98 AND ((G01N021-64 OR G01N021-77 OR G01N021-78 OR G01N031)/
L100     411 S L99 AND (OXYGEN OR O2 OR 1779/DRN OR R01779/DCN)
L101     211 S L99 AND (CO2 OR CARBON() (DIOXIDE OR DI OXIDE) OR 1066/DRN OR
L102     112 S L100 AND L101
          E R09609+ALL/DCN
          E R07186+ALL/DCN
L103     3787 S L98 AND Q505/M0,M1,M2,M3,M4,M5,M6
L104     818 S L103 AND ((G01N021-64 OR G01N021-77 OR G01N021-78 OR G01N031)
L105     143 S L104 AND (OXYGEN OR O2 OR 1779/DRN OR R01779/DCN)
L106     73 S L104 AND (CO2 OR CARBON() (DIOXIDE OR DI OXIDE) OR 1066/DRN OR
L107     112 S L100,L105 AND L101,L106
L108     112 S L102,L107
L109     45 S L108 AND ?POLYM?/BIX
L110     13 S L108 AND (Q12? OR Q13?)/M0,M1,M2,M3,M4,M5,M6
L111     47 S L109,L110
L112     1 S L108 AND W?/M0,M1,M2,M3,M4,M5,M6
L113     2 S L108 AND (E21-? OR E22-? OR E23-? OR E24-? OR E25-? OR E26-?)
L114     2 S L112,L113
L115     2 S L95,L114
L116     45 S L111 NOT L115
          SEL DN AN 4 7 10 20 28 29 31 34 36 45
L117     35 S L116 NOT E1-E30
L118     37 S L115,L117
          E BECTON/PA
L119     2434 S E3-E35
L120     15 S E37-E40
L121     91 S L98 AND L119,L120
          E PECT/PACO
          E BECT/PACO
L122     91 S E3-E5 AND L98
L123     91 S L121,L122
          E YEH M/AU
L124     125 S E3,E5
          E MING/AU
L125     14 S E41,E44,E56
L126     4 S L124,L125 AND L119,L120
L127     40 S L118,L126
L128     4 S L123 AND L127
L129     40 S L127,L128
L130     23 S L123 AND L99,L103
L131     4 S L123 AND L104
L132     5 S L130,L131 AND L100-L102,L105-L108
L133     5 S L131,L132 NOT L129
          SEL DN AN 1 4
L134     3 S L133 NOT E1-E6
L135     43 S L129,L134
L136     15 S L130 NOT L131-L135
L137     67 S L123 NOT L127-L136
L138     43 S L135 AND (?SENS? OR GAS? OR O2 OR O OR OXYGEN? OR CO2 OR CARB
L139     21 S L135 AND (?CROSSLINK? OR ?CROSS LINK? OR ?POWD? OR CATALY? OR
L140     5 S L135 AND ?RESPIR?/BIX
L141     43 S L135,L138-L140

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FILE 'WPIX' ENTERED AT 09:24:11 ON 29 JUN 2004

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